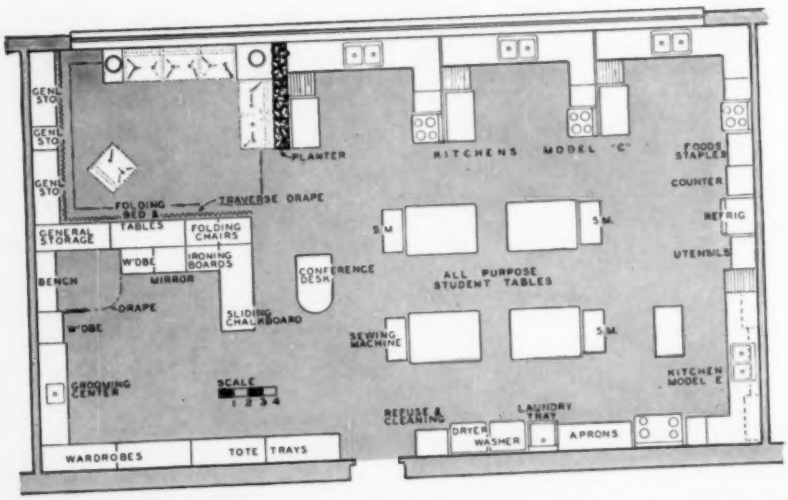
VOLUME 49, NUMBER 3 March 1957

JOURNAL OF Home Economics

RESEARCH ISSUE

Published by American Home Economics Association • Washington, D. C.

THE ALL-PURPOSE ROOM IS NO BETTER THAN ITS PLAN AND EQUIPMENT



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H57-2

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U. S. ARMY MEDICAL SPECIALIST CORPS

How to add interest to your Hot Bread Lesson

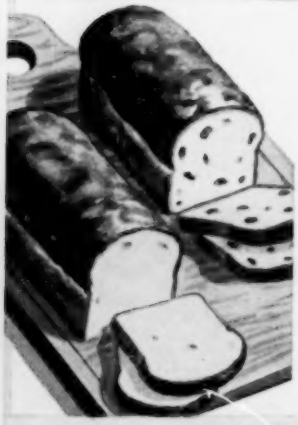
BASIC RICH YEAST DOUGH

2 packages active dry yeast
½ cup warm water
⅔ cup sugar
1½ teaspoons salt
1 cup Crisco
1 cup hot milk
6 eggs
2 lbs. enriched flour (8 cups sifted)

BASIC METHOD

Dissolve yeast in warm water. In large bowl stir sugar, salt, Crisco and hot milk until Crisco is in small pieces. Cool to lukewarm. Add ¼ of the flour (2 cups); beat until smooth. Add eggs and yeast mixture; beat until smooth. Stir in remaining flour. Cover and let rise at room temperature (about 1½ hours) until doubled in size. Punch down, divide into three parts and use as desired. Each part makes 1 loaf, or 12-16 rolls, or 1 coffee ring.

NOTE: In all recipes given, knead 1 part of dough till smooth (about 20 strokes) on lightly floured board.



WHITE BREAD

Shape 1 part of dough into loaf and place in a 9" x 5" x 3" Crisco-ed pan. Cover and let rise until doubled in size (about 1 hour at room temperature). Bake in a hot oven (400°F.) for 30-35 minutes.

RAISIN BREAD

Knead in 1 cup raisins while kneading dough until smooth. After bread is baked, ice with confectioners' sugar icing.

COFFEE RING

Roll 1 part of dough into 9" x 18" rectangle. Brush with Crisco, sprinkle with ½ cup brown sugar, 1 tsp. cinnamon, ½ cup chopped pecans. Roll lengthwise, form in ring on Crisco-ed baking sheet. Close ends. Cut ⅔ of way through ring at 1" intervals, turning edges slightly to side. Cover, let rise at room temp. until doubled in size (about 1 hour). Bake in hot oven (400°F.) for 30-35 minutes. Top with confectioners' sugar icing, cherries and nuts.

CRESCENTS

Roll 1 part of dough into 12" circle, cut into 12 sections and roll each section starting with wide end and roll to point. Place point side down on Crisco-ed baking sheet. Cover and let rise at room temperature until doubled in size (about 1 hour). Bake in hot oven (400°F.) for 12-15 minutes. If you want to add an extra bit of spice to these crescents, brush them before baking with melted Crisco and sprinkle with caraway or sesame seeds.

CINNAMON TWISTS

Roll 1 part of dough into 12" x 6" rectangle, brush with Crisco, sprinkle ⅓ cup brown sugar, 1 tsp. cinnamon over half the dough. Fold over to form 12" x 3" rectangle. Cut in 1" strips. Twist each strip, holding both ends of strip and twisting in opposite directions. Place on Crisco-ed baking sheet. Cover, let rise at room temp. until doubled in size (about 1 hour). Bake in hot oven (400°F.) for 12-15 minutes. Cool, ice with confectioners' sugar icing.

CRISCO MAKES 'EM LIGHT, TENDER AND EXTRA GOOD

Your students will love learning how to make these "show-off" hot breads! And, they'll be pleased to discover how easy they are to make with these recipes and pure, all-vegetable Crisco. Crisco's so pure, so creamy, so snowy white . . . and so easy to work with it's not surprising results are always simply delicious.

2 out of 3 bake and fry with Crisco ...it's digestible!

P.S. Be "in the know" about dough!

No need to bake dough at once—it can be refrigerated at least 3 days with or without first raising period. Use a large bowl, however, because of slight raising in the refrigerator. When ready to bake hot breads, remove dough from refrigerator, shape as desired and let double in size before baking.

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OFFICIAL ORGAN OF THE AMERICAN HOME ECONOMICS ASSOCIATION

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Notice of change in address should be received six weeks before the date of issue on which the change is to take effect. Both the *old address* and the *new address* should be given.

The Romance of Bisquick

The idea of Bisquick began in a railroad dining car in 1930. A General Mills sales executive ordered a meal after regular hours, and surprisingly, fresh biscuits were served. The chef explained that he mixed certain ingredients in the morning, stored the mixture in the refrigerator and used it as needed.

How Is An Idea Transformed Into A Product?

Intrigued by this idea, the General Mills man brought it to the attention of his company executives. They agreed that it had possibilities, and long months of research began. As with all General Mills products-to-be, exhaustive tests had to prove the product before it could go before the public. It was a full year later that Bisquick met these rigid standards, and full scale production could begin. In 1931, food shoppers first set eyes upon the mix that pioneered the many mixes in the stores today. They tried it. They liked it. It answered a need. They came back for more. Bisquick was here to stay.

Why Does Bisquick Continue To Grow In Scope? Two reasons: Service and Research.

General Mills' Home Service Department (familiar to the consumer as Betty Crocker and her staff) has consistently been a major factor in Bisquick's growth. As product improvement continued, so did the service to the homemaker. The homemakers themselves contributed ideas.

The same constant research which distinguishes all of General Mills products has helped to build Bisquick's value to American women. For example, before the end result can be the best obtainable, we know the ingredients must be right, the formula must be right.

Bisquick Problems Solved By Research

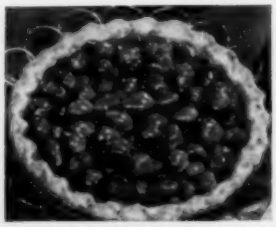
1. *Problem:* To find a leavening which does not deteriorate in storage, one whose action is controllable.
   Through research this answer: A particular phosphate leavening.
2. *Problem:* To find a shortening that could be more easily blended into the mix and further improve product quality.
   Through research this answer: A pure, highly refined special shortening.
3. *Problem:* To find a "custom-tailored" flour.
   Through research this answer: A special blend giving Bisquick it's unique characteristics.

The formula had to be practically infallible, in order to meet the high standards for which General Mills is universally known. The specific requirement was this: Results obtained with Bisquick must be as good as, if not better than, those obtained from combining separate ingredients.

Again, General Mills turned to research to insure this characteristic. From research findings special mixing methods were developed to insure absolute accuracy in measurement of ingredients and incorporating the shortening.

All these now with Bisquick

Biscuits, of course!


New Idea! Short Pie!

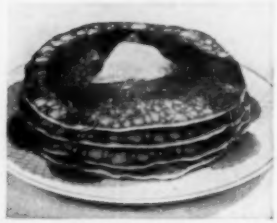
Even Cake!

Nut Bread's a favorite!

Doughnuts! (Surprised?)

Yes, it's pizza

Muffins—light, tender!


Pancakes—pretty!

Here's where many a new Bisquick idea begins: In the Home Service Department of General Mills. The Betty Crocker staff of Home Economists is constantly testing and experimenting to increase the product's value to the consumer.

Now! Betty Crocker's Bisquick Cook Book. 157 kitchen-tested recipes and ideas. Another service to the American woman from the Home Economists in the Home Service Department at General Mills.

Further improvements were in the packaging field. A special parchment was developed to insure flexibility and still prevent tears in the box liner. This helped protect the flavor of the shortening, which increased the product's shelf life.

A little over two years ago home economists in the Betty Crocker Kitchens were experimenting with a new Bisquick idea, a chocolate cake. The color of the cake was not uniform, due to the uneven particle size of shortening in Bisquick.

Betty Crocker

Again, General Mills looked to research. Following the usual intensive testing and experimental work, this solution: Bisquick should be "texturized." This is a process in which the shortening in the Bisquick formula is cut into uniformly fine particles. This insures a lump-free, still more versatile mix, which produces finer, lighter baking results.

Texturizing Helps Accelerate Bisquick's Progress

With *texturized* Bisquick, the door opened to still more uses of the product. Once more, the home economists on the Betty Crocker staff worked diligently, developing additional recipes and perfecting ideas, many of which came from homemakers. Each recipe was tested thoroughly in true Betty Crocker tradition to meet the high standards set for all General Mills' products. Next step was to get these tested recipes and ideas into the hands of the American homemaker.

Betty Crocker's Bisquick Cook Book Makes Its Bow

Who ever realized in the 30's that some day Bisquick would need a cook book all its own! That day is here with the appearance of Betty Crocker's Bisquick Cook Book. With its 157 kitchen tested recipes and ideas, this cook book is tangible evidence of Bisquick's growth. 8,000,000 copies are now in the hands of American women.

Betty Crocker's Bisquick Cook Book is another milestone in the progress of Bisquick. This publication is also further evidence that the contributions made by the home economics profession are a vital factor in the growth of any food product.

What Is Bisquick's Value To The Modern Woman?

Today's homemaker is busier than ever, with increasing civic and social obligations, a growing family and perhaps outside work. Even so, she is anxious to be known as a good cook.

Today's quality mixes, such as Bisquick, help her achieve that satisfaction from two standpoints. They cut down preparation time and they offer real assurance of success. Bisquick occupies a unique position among mixes, because it produces excellent results simply and easily for a wide variety of bakings. With the versatility of use, benefits to today's homemaker are multiplied over and over. The romance of Bisquick is a story of a wonderful team, research and service, of how that team has again combined to create a success.

General Mills

Betty Crocker Bisquick Cook Book

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Please send me a free copy of your new BISQUICK COOK BOOK.

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Are you interested in a Low-Fat Breakfast?

In the dietary regimens recommended by nutrition and medical authorities for the purpose *of reducing fat in the diet* the importance of the morning meal is given full recognition. That a low-fat breakfast should be adequate not only in calories, but also in its content of essential nutrients, is advocated by medical as well as nutrition authorities.

The basic cereal breakfast pattern shown below *is low in fat and low in cholesterol* and makes a worth-while contribution of complete protein, essential B vitamins, and minerals. Thus it merits inclusion in dietary regimens for the purpose of reducing fat in the diet.

BASIC CEREAL LOW-FAT AND LOW-CHOLESTEROL BREAKFAST PATTERN

Orange juice, fresh, ½ cup, Cereal, 1 oz., with whole milk, ½ cup, and sugar, 1 tsp., Bread, white, 2 slices, with butter, 1 tsp., Milk, nonfat (skim), 1 cup, black coffee.

Nutritive Value of Basic Cereal Breakfast Pattern

Calories	502
Protein	20.5 gm.
Fat	11.6 gm.
Carbohydrate	80.7 gm.
Calcium	0.532 gm.
Iron	2.7 mg.
Vitamin A	600 I. U.
Thiamine	0.46 mg.
Riboflavin	0.80 mg.
Niacin	3.0 mg.
Ascorbic Acid	65.5 mg.
Cholesterol	32.9 mg.

Note: To further reduce fat and cholesterol use skim milk on cereal which reduces Fat Total to 7.0 gm. and Cholesterol Total to 16.8 mg. Preserves or honey as spread further reduces Fat and Cholesterol.

Bowes, A. deP., and Church, C. F.: Food Values of Portions Commonly Used. 8th ed. Philadelphia: A. deP. Bowes, 1956.
Cereal Institute, Inc.: The Nutritional Contribution of Breakfast Cereals. Chicago: Cereal Institute, Inc., 1956.
Hayes, O. B., and Ross, G. K.: A Supplementary Food Composition Table for Dietary Studies. J. Am. Dietet. A.: Jan. 1957.

CEREAL INSTITUTE, Inc. • 135 South LaSalle Street, Chicago 3
A research and educational endeavor devoted to the betterment of national nutrition

This month's tip from Kay Kellogg

How to stage a Candy Contest with Snap, Crackle, and Pop!

Start with these simple recipe demonstrations:

Melt ¼ cup butter in 3-qt. saucepan. Add ½ lb. marshmallows and cook over a low heat. Add ½ teaspoon vanilla. Stir constantly until blended.

Combine 1 cup finely cut dates, ⅓ cup sugar, 1 well-beaten egg in frying pan. Cook over low heat. Stir constantly until mixture thickens.

Remove pan from heat. Add 5 cups Kellogg's Rice Krispies. Stir briskly until well-coated with marshmallow mixture.

Remove from heat. Stir in 2 cups Kellogg's Rice Krispies, ½ cup chopped nutmeats, ¼ teaspoon salt, ½ teaspoon vanilla flavoring. Cool slightly.

Lightly press warm mixture into buttered 13 x 9-inch pan. When cool cut into 2-inch (approx.) squares. Yield: 24 squares.

Shape into small balls. Roll in 1 cup shredded coconut. Let stand until cool and firm. Yield: 24 balls, 1½ inches in diameter.

Clip this page for your file. For your FREE copy of "Choice Recipes for Chicken using Kellogg's Ready-to-Eat Cereals," just write Kay Kellogg. Kellogg Co., Dept. JHE 357, Battle Creek, Michigan.

After your demonstration, have half of class prepare Crispy Treats, half Skillet Candy. Then, at the end of the period, ask class to sample candies and vote for best tasting batch. In your summary, point out that both of these recipes are easy to make, take very little time, and require only a few, simple ingredients.

Kellogg's OF BATTLE CREEK

LOOK! We've changed our name..

.... The "Consumer Service Department" will now be known as

GENERAL FOODS KITCHENS

Of course it's only the name that's changed. There's been no change in our basic objectives; we at General Foods Kitchens will continue to develop new products, investigate new techniques, bring you new and tempting recipes and photographs.

Here are the departments and the people who will be serving you.

The 6 Test Kitchens that test our products and create recipes for them. Two taste test rooms and a laundry center also belong to this group.

The Photography Service that plans and prepares food for our handsome General Foods pictures.

The Product Representatives whose special responsibility it is to coordinate all the activities of a product.

The Editorial Services that translate kitchen findings into recipes and service material.

The Product Publicists who supply food editors with news of products developed and created by us.

The Distribution Group that sends out recipe folders to home economists, teachers and consumers.

The Correspondence Group that answers the thousands of letters we get from homemakers.

The Consumer Relations Staff that handles conventions and who are our liaison with other home economists, homemakers, and the medical profession.

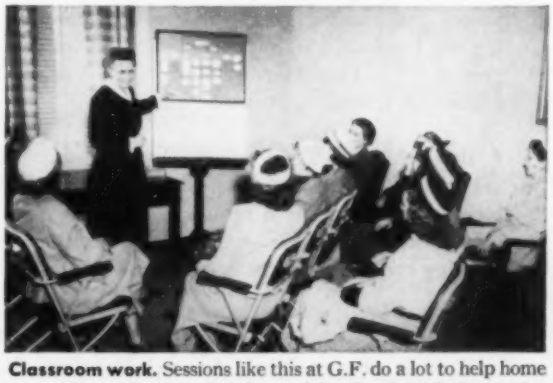
We hope you'll come and see our kitchens. They are designed and equipped for just one purpose . . . to help us develop modern homemaking technics and products . . . to enable us to serve you—and all the friends of General Foods.

General Foods Kitchens, White Plains, N. Y.

Taste testing. Before a new product "goes to market" it must be tested and approved by the people responsible for it. Here you see some General Foods folks deciding whether these Birds Eye Chicken Pies are ready for Mrs. Consumer.

Institutional kitchens. Food on a big scale is the big interest here. Quantity recipes developed by General Foods are sent as a free service to thousands of restaurants, institutions and school lunch managers.

Photography kitchen. Where we fix the foods for those beautiful G.F. pictures. You'll see them in advertisements, in recipe booklets and other educational material. Planning dishes, choosing accessories are part of the home economist's job here.



Classroom work. Sessions like this at G.F. do a lot to help home economics students in their future jobs. Teachers find our educational material valuable. Last year 11,000 of them requested literature, 700,000 copies of a single recipe folder were mailed out.

Washington News

• **The AHEA proposal for a Research Institute** for the American Home is being presented to all state home economics associations having spring meetings between February 1 and June 1. State discussions will give all members of the state groups an opportunity to become better informed about the need for, and the proposed functions of, such an Institute. State meetings are also providing an opportunity to make plans for energetic support of legislation for the establishment of the Institute as an agency of the federal government.

The Texas Home Economics Association reports that it has already appointed a special committee headed by Mrs. Florence Low to make plans to promote the Research Institute proposal in Texas. Legislative committees of several other state associations have held meetings to plan action.

The proposal was also scheduled to be presented to a meeting of the home economics department of the National Education Association in Atlantic City on February 16.

The explanatory brochure "Needed an Expanded Program of Research for the Nation's Families," which explains the proposal for the Institute, and "Needs in Research for the American Family," a supplementary publication discussing current gaps in research for family well-being, are both in their second printings—more than 20,000 copies of the brochure having been distributed already. AHEA members may obtain copies of the brochure from the presidents of their state home economics associations or they may write to AHEA headquarters for either or both publications.

• **School construction.** In a special message to Congress on January 28, President Eisenhower urged Congress to pass legislation on federal aid to school construction quickly and without complicating the legislation by provisions dealing with integration. The President recommended a total of $2 billion for school construction aid.

• **Items in the President's budget message** that are related to areas of interest to AHEA are the following appropriation requests:

Vocational Education—An increase of $2 million is being requested for practical nurse training; the George Barden Fund request is the same as the 1957 appropriation.

Children's Bureau—An additional $4,572,300 is being requested for maternal and child health grants to the states.

Social Security—The 1958 budget request for grants to states is $379,400,000 more than the 1957 appropriation, with an extra request for $2,500,000 for staff training in public assistance.

Library Services Act—Although the Office of Education requested the full amount of the authorization ($7,500,000), the budget request is for $3 million.

Food and Drug Administration—An increase of $2,521,000 is proposed for 1958. On recommendation of a citizens advisory committee in 1955, the FDA appropriations have been increased for the past two years to permit strengthening law enforcement and developing basic research on new problems of food and drug protection.

Home Economics Research—An increase of $253,000 for program is requested—$200,000 of which would be used for human nutrition and $53,000 for clothing and housing research.

• **The AHEA executive committee held its regular** midwinter meeting in Washington January 18 to 20. Items on the agenda included consideration of the question of recruitment for home economics, review of proposals for constitution revisions which would establish a more representative governing body, reports on plans for the 1957 annual meeting, progress reports from the sections, and recommendations from several AHEA committees.

The committee voted to call together a conference on recruitment to discuss what AHEA might do on a national level to supplement and extend work already under way.

The constitution and bylaws committee, acting on instructions from the 1956 annual business meeting, presented its proposal for an assembly of delegates which would combine functions of the present AHEA council and the general business meeting. This proposal, as well as revised suggestions for dues for the homemakers groups, will be presented in the May JOURNAL and at the annual meeting. However, the executive committee felt that there might be an advantage in postponing definite action on the assembly of delegates until the 1958 meeting in order to give states an opportunity to discuss the proposals. This suggestion will probably be presented at the 1957 business meeting.

AMERICAN HOME ECONOMICS ASSOCIATION
Forty-eighth Annual Meeting, St. Louis, Missouri, June 25 to 28, 1957
Headquarters: Kiel Auditorium

VOLUME 49, NUMBER 3, MARCH 1957

JOURNAL OF Home Economics

Everyone interested in the development of a reliable way to gauge sensitivity to young children will be interested in the findings of this study which made use of an easily administered word association test.

Use of a Word Association Test for Indicating Sensitivity to Children: A Preliminary Report

Anita O. Reith and Helen C. Dawe

Mrs. Reith is director of the Meeting House Nursery School, Madison, Wisconsin. This study was part of her master's thesis in the School of Home Economics, University of Wisconsin, where she was a teaching assistant. Dr. Dawe is professor of home economics, chairman of the department of home management and family living, and director of the University Preschool Laboratory at the University of Wisconsin.

The Problem

The problems involved in predicting teacher success and in preservice selection of teachers have challenged investigators for the last half century. Many studies have attempted to determine the relationship between teaching success and various measures of personality and character traits. In recent years the worth of projective techniques and situational tests in predicting teaching success has been receiving emphasis. Probably no one would question the statement that a successful teacher, especially a teacher of young children, must be sensitive and sympathetic to the feelings and actions of the children. In the present pilot study, a variation of the word association method is used in an effort to detect and measure such sensitivity. The work of Goodenough and her associates (*6, 7*) gave support to the use of such a device.

Based on the knowledge that an emotional complex activated by a stimulus word will produce irregularity of response, the present study was designed to give the experimental subjects an emotionally toned experience immediately preceding administration of the word association test. The theory behind this and the hypotheses to be proved or disproved by this method are: (1) that the experience would affect the subjects differently depending upon their sensitivity, and (2) this difference in sensitivity would be revealed by their responses on the word association test. The long-range hypothesis is that those subjects who reveal more sensitivity to the experience possess more of the sensitivity to children considered necessary and desirable in a successful teacher.

Test Procedure and Subjects

The test experience for the experimental group involved each subject's reading a "story" (about 1,000 words in length) designed to evoke emotionally toned feelings. It concerned a little boy who was afraid of the dark and who believed that there were menacing animals in the darkest corner of his bedroom. The action centers around this child and his parents' reaction to his fear. The story was written by Mrs. Betty Jensen Jones.[1]

The word association test given to both the experimental and control groups contained 100 words. Fifty were taken from words appearing in the story, the other fifty from two standard word association tests.

The words from the story were selected in the following fashion. Two workers listed independ-

[1] Former research assistant in the School of Home Economics, University of Wisconsin, presently on the staff at Pacific Oaks Friends School, Pasadena, California.

ently the words which seemed to them "significant" in their relation to the story. Sixty-three words appeared on both lists, and from them the final fifty were selected by chance. The other fifty words were chosen by first combining the Jung list (as modified by Elder) and the Kent-Rosanoff list. Any word which appeared in the story was then eliminated, and from the remaining 150 words, 50 were selected by chance.

The subjects were junior and senior students at the University of Wisconsin enrolled in an introductory home economics course in child development. All of the word association tests were administered during the regular classroom period and were given near the end of the course. In the control group the word association test was followed one week later by a repetition of the same test. For the experimental group the procedure differed in that each subject read the story immediately preceding the second administration of the word association test. In order to have equal test sets in each group a few of the sets were eliminated by chance so that there were 70 in the control and 70 in the experimental group.

Results

In the first analysis attention was directed to those instances in which the subject's response to a word on the second test differed from her response to that same word on the first administration of the test. All changes in response were classified as either "not related," "related," or "related but common." (Minor variations in response, such as using the singular on one test and the plural on the other, were disregarded.) A "not related" response was defined as a change which seemed quite unrelated to the story; a "related" response, as one which seemed definitely to reflect the influence of the story; and a "related and common" response, as one which could be related to the story but which at the same time was also a common association with the stimulus word. Two scorers, working independently and not knowing whether they were scoring experimental or control group tests, obtained 92 per cent agreement in classifying 2,313 changed responses.

Next, these same tests from both the experimental and the control groups were assigned by the judges to three categories: "surely read," "possibly read," and "not read" to indicate the judge's *estimate* of whether or not the subject had read the story prior to the second administration.

It should be emphasized that these categories represent only the judge's estimate as to whether the subject had surely, possibly, or not read the story. Based on the hypothesis that people's responses to the word association test would in some way be related to and reveal their sensitivity to the emotionally toned experience of reading the story, the judges in effect were estimating variations in sensitivity to the story.

These classifications were made on the basis of (1) definite changes in responses that the judge felt were unquestionably caused by reading the story, (2) some responses that he considered might possibly be caused by the impact of the story, and (3) responses of a sort that gave no indication that the person had had the experience of reading the story.

The two scorers working independently reached an agreement of 88 per cent. All 140 tests were categorized for final analysis by one of the judges, still not knowing to which group the tests belonged.

The extent to which this judge's estimate as to whether or not the subject had read the story was "correct" is as follows:

1. Of the 70 in the experimental group, all of whom read the story:
   a. Forty-five or 64.3 per cent were successfully detected.
   b. Twenty-five or 35.7 per cent were not detected.
2. Of the 70 in the control group none of whom had read the story:
   a. Sixty-six or 94 per cent were correctly classified.
   b. Four or 6 per cent were incorrectly classified.

The hypothesis that people's response to the word association test would vary as a result of having an emotionally toned experience (reading the story) seems justified. There was 94 per cent accuracy in detecting those who had *not* read the story. In addition, and more important, the failure to detect 36 per cent of those who *had* read the story seems definitely to give support to the theory that people differ in their sensitivity to the story, or more precisely, in the extent to which their sensitivity is revealed as judged by this use of the word association test.

Experimental group results. The next analyses were concerned with differences in the experimental group between the 25 subjects who were estimated by the judges as "surely read," the 20 subjects estimated as "possibly read," and the 25 subjects estimated as "not read." All of these had actually read the story. Comparisons were made on grade point average for all college work up to and including the semester in which the word association test was taken, grade in the

course in child development in which subjects were enrolled, number of "related" changes, and number of "related and common" changes made from the first to the second test. See table 1.

TABLE 1

Comparison of groups estimated as "surely read," "possibly read," and "not read"

GROUP	NUMBER	GRADE POINT AVERAGE	GRADE IN HOME ECONOMICS 119	NUMBER OF CHANGES	NUMBER OF RELATED CHANGES	NUMBER OF RELATED AND COMMON CHANGES
Surely read	25	1.551	1.80	62.68	10.04	3.08
Possibly read	20	1.626	1.65	54.40	3.75	2.60
Not read	25	1.697	1.40	52.76	1.36	1.28

The "surely read" group had the largest number of "related" and "related and common" responses. This was to be expected since these factors were the basis for their being classified by the judge as "surely read." They also had the highest grades in the child development course with an average grade of 1.8 as compared with 1.4 for those judged as "not read." (Grade of C equivalent to 1.) Why are higher grades in this course in child development found in the "surely read" group? Do those who may be more sensitive toward children perform better in the course? Do those who do better in the course develop more sensitivity in part because of the course? This "surely read" group was not more able scholastically, at least as measured by the grade point average, for they had the lowest average. While the difference is admittedly very slight, it tends to discredit the theory that those who reacted most definitely to the story and who had the better grades in the child development course were more intelligent.

In another comparison the experimental subjects were grouped according to their major study with the following categories: (1) child development majors, (2) home economics education majors, (3) medical services majors (for example occupational therapy), and (4) other majors. A comparison of the percentages of each major falling in the three categories is given in table 2.

The child development group had the largest percentage (50 per cent) of its subjects estimated as "surely read." The percentage rated as "not read" is quite similar (about 20 per cent) for the child development, the education, and the medical services groups while for the "other majors" group more than half (56.3 per cent) were rated as "not read." These findings at least suggest that those who are especially interested in professional work in a teacher-pupil or in a therapist-patient relationship possess or reveal more sensitivity to children on this measuring device.

In order to determine which words were more effective as "indicator" words the frequency with which the responses to them were judged as "related" was tabulated for each of the three groups "surely," "possibly," and "not read." Only words judged as "related" five or more times are included in these comparisons. In the "surely read" group there were 25 stimulus words which produced "related" responses five or more times.[2]

Four of these words produced "related" responses five or more times in the "possibly read" and also in the "not read" groups. All of these "indicator" words were from the ones selected for the test as being connected with the story, and many of them could be considered as emotion-loaded. There were 31 words to which the responses were *never* considered as either "related" or "related and common" on any of the 70 experimental group tests.[3]

TABLE 2

Comparison of major study with the estimates

MAJOR STUDY	TOTAL NUMBER	JUDGE'S ESTIMATE					
		Surely Read		Possibly Read		Not Read	
		Number	Per cent	Number	Per cent	Number	Per cent
Child development	14	7	50	4	28.6	3	21.4
Home economics education	17	5	29.4	8	47.1	4	23.5
Medical services	12	5	41.7	5	41.7	2	16.7
Other majors	27	8	29.6	3	11.1	16	59.3

[2] Illustrative of the words (with their frequency of "related" responses) are: hide (5), friendly (5), sleep (5), silly (5), dark (6), upset(7), scare (8), afraid (11), fear (15).

[3] Illustrations of the words never considered related to the story were: river, earth, street, mutton, sing, table, butter.

These words were mainly neutral rather than emotional in connotation; many of them received stereotyped responses. The rather pronounced differences between words in the frequency with which they evoked responses judged as related to the story suggest that a somewhat shortened version of the test might be possible and also suggest that attention to certain words might be especially valuable in analyzing and interpreting individual responses to the test.

Summary

This pilot study was concerned with the usefulness of a variation of the word association test designed to detect differences in subjects' sensitivity to children. There were 70 subjects in the experimental and 70 in the control group. The subjects were all enrolled in an introductory home economics course in child development at the University of Wisconsin. A specially designed 100-word association test was given and then repeated one week later. In the experimental group, however, the subjects read a story about a little boy's fear of the dark immediately preceding the administration of the second test.

After satisfactory judging agreement had been established each test set was categorized, by a judge who did not know which were experimental and which were control subjects, as "surely read," "possibly read," and "not read." Of those who had not read the story (control group), 94 per cent were correctly judged, while of those who had read the story (experimental group), 64 per cent were successfully detected and 36 per cent were not detected. These results lent support to the hypothesis that the individuals who had heard the story would vary in their sensitivity to it as revealed by their word associations.

Those who were rated as "surely read" had higher grades in the course in child development than the subjects rated as "not read." When over-all grade point average was considered, however, those estimated as "not read" were superior. This tends to discredit the theory that the "surely read" group obtained a better grade in the course because they were superior scholastically. It does raise the question as to the reasons for the relationship between superior achievement in a course in child development and greater sensitivity to children as indicated by this test. When comparisons were made on the basis of the students' major study it was found that the child development majors had the highest percentage of subjects rated as "surely read." Those majors in which the individual expects to work professionally in a teacher-pupil or therapist-patient relationship appear similar in the percentage (about 20 per cent) falling in the "not read" category while "other majors" have a higher percentage (56 per cent) falling in this category.

The findings of this preliminary study suggest that the word-association test as used here may be of value in detecting differences in individuals' sensitivity to children. It was possible to group the subjects according to the degree to which they revealed the effect of having read the story. The characteristics of those groups supported the idea that the differences were in some way related to their understanding or interest in children. The test appears to have the advantage of being quite subtle in that it allows the subject relatively little, if any, information concerning its purpose. Only further research can tell whether the test has sufficient validity as a measure of sensitivity to children and whether this is the same type of sensitivity felt necessary to successful teaching.

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Everyone interested in assembling research data by the interview method will find the suggestions in the following article valuable in planning and carrying out such research. The point of view is a synthesis of the psychological background of one author and the sociological training of the other.

Home Interviews with Families[1]

Lee G. Burchinal and Glenn R. Hawkes

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If we want to know how people feel: what they experience and what they remember, what their emotions and motives are like, and the reasons for acting as they do—why not ask them? —GORDON ALLPORT.

AT present, there are increasing numbers of research problems in areas of home economics which demand non-laboratory data. In many cases, the data for these investigations are being obtained from interviews with family members. Therefore, a discussion of purposes, procedures, and limitations of interviewing as a research tool should be of value to researchers in many areas.

Interview Method of Research

Where the focal data of the investigation are the attitudes, perceptions, or interests of persons, the direct and often most fruitful approach to obtaining the pertinent data is to ask the individuals themselves. The interview is a face-to-face method of obtaining this information by means of conversation carried on by the interviewer and the respondent.

Advantages of the interview method. Parten provides one of the most lengthy discussions of advantages and limitations of the interview method of research (*1*, pp. 79-82). Properly used, it possesses many potentialities.

The interview method yields a high percentage of co-operation inasmuch as most people, when reasonably approached, are willing to co-operate. It can be made to yield an almost perfect sample, which alleviates the concern that investigators have after obtaining a 40 or perhaps 60 per cent return on a mail questionnaire. Also, in the interview situation, the respondent will generally permit the interviewer to engage a much larger block of his time than he would give if the same questions came to him in a questionnaire.

Another advantage of the interview is that the information obtained by means of this method is more likely to be correct than is information obtained by means of other techniques, because the interviewer can clarify seemingly inconsistent responses. Inaccurate answers or attempts to mislead the interviewer can be identified and rectified by means of cross checks or persistent probes for details which can be built into the interviewing schedule. Questions about which the respondent might be sensitive can be handled more delicately in the interview. Many areas of belief or behavior (witness Kinsey) can be broached by this method which could not be tapped by other methods of research.

The flexibility of the interview allows the level of conversation to be adjusted by the interviewer to the level of the respondent. The interview method also permits collection of supplemental data about personal or physical characteristics of the respondent, or descriptive data about the home can be obtained solely by the interviewer's observation. Research instruments such as tests, questionnaires, or visual material also can be presented in the interview situation (*2*, pp. 399-434). Usually one can count on 100 per cent usable data from the interview or from tests and scales completed in the interview setting, because the interviewer can quickly and carefully edit the forms to make sure that every question is answered and that the responses appear to follow a reasonable order. Completion of tests or scales in an interview setting generally assures a controlled situation. The inter-

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viewer knows, for instance, that the answers listed by the mother or father are responses given by those persons and not some commonly agreed upon or otherwise invalid responses.

Limitations of the interview method. Interviews are time-consuming, and, if a fairly large area is surveyed, transportation costs may make the method unfeasible. The involvement of the interviewer in the data he is reporting and the effect of the interaction between interviewer and respondent create certain effects which may introduce bias into the data. Hyman (*3*) has presented a detailed report of the study of error in research that depends on the interview. Unless the interviewer is well trained, he introduces biases into the situation. He may confuse his expectations of what he thinks the respondent will say with the actual content of the interviewee's response. In the interview, one must always recognize two other sources of error: the degree of unreliability of the respondent and the distortion of the respondent's ideas by the very nature of the communication process between interviewer and respondent. Any factors such as the respondent's perception of social class or attitudinal or belief differences between himself and the interviewer will condition his answers (*4*). If one is interested in interviewing only homemakers, contacts may be made during the day; but if data are desired from husbands as well, then most of the field work will have to be done in evenings or on week ends. In rural areas, contacts with farmers have to coincide with times when they are likely to be doing chores or are close to the house or during seasons when field work does not demand their attention. These considerations may make interviewing difficult or impractical.

Interview Guide and Pretest

The interview guide. Since detailed discussions about the development of questionnaires and interview guides are available in books on social and psychological research methods (*1, 5, 6, 7, 8,* and *9*), only a few comments are given here. The interview guide is a written form from which the interviewer reads the questions he asks the respondent and upon which he records the answers the respondent gives him. The quality and range of data obtained depend upon the skillfulness and foresight of the investigator when he developed his guide. The interview guide has several major purposes: it translates research objectives into specific questions that the respondent can answer; it permits the interviewer to present a standardized set of questions to each person he interviews; and it permits accumulation of specific details as a basis for later quantification and possible statistical analysis.

Questions must be respondent oriented. They must be keyed to the language and information level of the persons whom the interviewer thinks might have the most difficult time answering them. This is especially important when a random sample design is employed and where it is likely that many respondents will have only a grammar school education. Leading questions—in which the answer is implied in the question—must be avoided. Each question should contain only a single idea to which the respondent is asked to reply. Questions should be arranged in a psychological order that will make sense to the respondent. The first few questions should help to orient the respondent to the general nature of the interview. He may have had certain reservations about proceeding with the interview, and successful completion of these first questions will tend to reduce his anxiety and motivate him to complete the interview. As the respondent develops greater confidence in the interviewer and feels more at ease, questions with which he is more likely to be emotionally involved can be asked. Where the investigator is interested in certain attitudes or beliefs of the respondent, the "funnel technique" of questioning is often helpful. In this approach the most general question pertaining to the topic is asked first, then progressively more restricted questions are presented. For illustration see Cannell and Kahn (*5*, pp. 348-349).

The pretest. A pretest is essential to the successful completion of research using the interview method. The actual number of pretest interviews will depend on the problem under consideration, the length of the interview, and the confidence and skill of the interviewer; but regardless of the number of cases in the pretest, it should meet several major objectives. Pretesting experience should help the investigator determine whether responses obtained fulfill the research objectives. Data should also permit the investigator to estimate the extent to which questions fit respondents' language and thinking levels. A third pretest objective is to train the interviewer in use of the guide and, if he is relatively untrained, to develop his confidence and skill as an interviewer.

Some supplemental data that are important for planning the major interviewing can be obtained from the pretest. Various approaches and opening remarks can be tried, areas of greatest sensitivity identified and proper probes developed, and length of an average interview estimated as a basis for

determining expected number of interviews per day and estimated duration of field work.

Pretesting is conducted with the same type of respondents as the major study, but pretest cases are generally not included in the study proper. In a pretest some persons use a random sample; others, a sample of convenient or easily accessible respondents; but purposeful selection of pretest cases might be desirable where the interviewer is relatively untrained. It might be especially advisable for the inexperienced person to interview more of the respondents or families most unlike his own family in various characteristics.

Incidentally, here is another potential of the interview method of research. Most of the students in our colleges and universities come from the broad segment of American society which has been defined as the middle class. As an interviewer, an individual has access to homes which may be far different from his own, either lower or higher in level of living. After such experience, a student might be less apt to generalize about what "people" do or think.

Interviewing Procedures

Interviewing procedures may be grouped under five main headings: locating the families, opening comments, asking the questions, recording the information, and closing the interview. Some general discussions of interviewing techniques or procedures are available (*1*, *5*, *6*, *9*, *10*, *11*, *12*, and *13*). Special mention should be made of a recent issue of the *American Journal of Sociology* which was devoted entirely to the topic of interviewing (*14*).

Locating the families. At the beginning of the field research, the location of all the cases might be marked on a map as an aid in dividing work periods so that only a minimum amount of time is lost in travel. City street maps and country road or plat maps are usually available at city or county engineering offices.

Situations where apparently no one is at home deserve a little comment. When there is no answer, the interviewer might look around the back of the house or perhaps knock on the back door. In rural areas, the interviewer certainly should check in the barn or other outbuildings before leaving. When the family is not home it is often helpful to ask neighbors when the parents are usually home so that time on a call-back will not be wasted. If no information can be obtained, arrange the call-back so that it occurs at a different time of the day, perhaps near mealtime.

Opening comments. The interviewer's opening comments—friendly and confident—should allay any suspicions respondents may have and ensure their co-operation in the study. This initial contact is very important for the success of the interview. Research conducted with persons interviewed in several nation-wide surveys showed that the vast majority of the persons found the interview experience enjoyable and wouldn't object to being interviewed again (*15*). See also Merton (*16*).

After the casual opening greeting, the interviewer should explain briefly the reasons for coming to the respondent's house. The respondent needs to be assured that he wasn't selected for any particular reason. Generally any reluctance he may have in regard to being interviewed will disappear when he is assured that nothing highly personal is involved and that all information is strictly anonymous and confidential. If the interviewer explains that persons or families were chosen by "chance" and that a large number of persons or families are being interviewed, the respondent will be convinced that his information will be anonymous. Immediate reference to the college or university or the agricultural experiment station will help convince the respondent of the legitimacy and worthwhileness of the study and his importance to its success.

Several writers have listed some of the more frequently encountered objections and have suggested techniques for coping with them (*1*, pp. 351-355; *6*, pp. 192-194). In answering respondents' objections, the interviewer should show that he understands their reluctance to be interviewed, but at the same time he should not go any further into details than necessary. Altruistic appeals for co-operation appear to have wide acceptance and frequently overcome the milder objections.

When the respondent asks how long the interview will last, it is best to give an honest estimate of the average length of the interviews.

Some researchers feel that a letter or card mailed to the respondents prior to the interviewer's visit aids in achieving co-operation. Interviewing experience of many researchers indicates that no advance introduction is necessary. In fact, a letter describing the proposed visit may serve only to create doubt, confusion, or suspicion in the minds of the respondents, whereas the interviewer can present the purposes of the study and answer any questions.

Asking the questions. Frequently it is desirable to establish a strong relationship with the respondent by engaging in some "small talk" before begin-

ning the interview proper. This helps to establish a conversational tone, puts the respondent more at ease, and helps the interviewer judge the appropriate level of language.

By his actions and form of questioning, the interviewer should establish a relationship of equality between himself and the respondent. Questions should be asked in a normal conversational tone with no emphasis or leading suggestion and, in general, exactly as they appear on the interview schedule. In some situations the wording may have to be altered to help the respondent comprehend the question. However, rereading is sufficient to clarify the meaning for most respondents. In some cases the order of the questions may be altered in order to facilitate progress since respondents sometimes anticipate questions and provide answers related to other queries.

After each response, the interviewer must decide whether he obtained a complete response. If not, he must ask additional probing questions. Usually the more specific answers are, the more valid and useful they are. Probing helps to achieve this. Specification is desirable because persons frequently make errors or their information is less reliable when they generalize. To help the respondent describe accurately some past events or feelings associated with past events, specific probes asking where he was living then, what work he was engaged in at the time, or the age of a child may encourage him to fit together ideas of his past and to reconstruct them accurately.

At some crucial points, particularly areas in which he might be sensitive, the respondent sometimes attempts a reversal of roles. Instead of answering the question, he asks the interviewer what he might do. In this case, it is usually advisable to return question for question. If progress is not made on the point in question, continue with other questions and try a different approach to the informant's "sore spot." The interviewer should pursue probing until no significant contradiction or ambiguity exists. This is the essential point of interviewing.

Silences during the interview are often frightening to the novice interviewer, but they need to be handled as an expected feature of this method of gathering data. If periods of silence do not bother the interviewer, they generally will not disturb the respondent. When the respondent fails to answer, the interviewer should appear sympathetic, smile, relax a bit himself or otherwise demonstrate that he understands the respondent's position. In any event, let the respondent think it out. If no response comes after a minute or so, probing might be undertaken.

Recording the information. For questions for which a factual or categorical answer is appropriate, the recording operation is reduced to placing a check or symbol on the interview schedule. Kinsey has demonstrated that use of predefined categories may have much wider application than previously has been thought possible (*17*, pp. 71-73). The Fels Institute scales also show skillful use of precoded categories for recording responses from mothers about their relations with their children (*18*).

Where categories are not used to record answers, the investigator must decide whether a verbatim answer should be taken or whether some sort of a summarization is acceptable. Commercial pollsters are usually required to take down verbatim responses. In academic research, where there is frequently continuity in form of one person from interviewing to analysis, the criterion of absolutely verbatim answers can be qualified. Verbatim answers can still be taken, and the interviewer will be amazed at the amount of information he can take down in longhand in just several minutes. Private systems of shorthand and abbreviations can speed up recording of information. A few points to keep in mind are: Never erase; just cross out and continue; erasing wastes time! Start writing as soon as the respondent begins speaking. Some experienced interviewers finish writing the last response while they are asking the next question; however, most individuals will not mind waiting a minute or so while the interviewer completes recording the response. If the interviewer comments that the last answer was "right to the point," or "was so well put, I want to get it exactly," the respondent will even feel flattered. In some cases, excessive concern with getting all the details of the reply will detract from the relationship between the interviewer and the respondent.

Some interviewers report that they take down only key phrases and immediately after the interview write out completely the total responses while they are still fresh in mind. This is particularly useful where probing has been necessary. In probing, it is essential to continue talking with the respondent to force him to rethink what he has said. In this process, delays or interruptions due to recording can destroy the usefulness of the process. The important data are the end response and this should be recorded verbatim, in summary, or by some key which will be completed after the interview.

When responses are recorded, the interviewer should distinguish between the answer proper and amplifying or illustrative comments. While the latter may be interesting, they may serve little value for analysis of the data. The interviewer should also differentiate between qualifying comments and illustrative comments. Use of probes is frequently necessary to determine where the qualification is so strong that it constitutes a rejection of some proposition or whether the qualification is a modified form of agreement or disagreement.

Tape or wire recorders have come into prominent use in research and their use eliminates the recording problem, but as anyone who has used recorders in research will testify, the transcription problem is not solved. Researchers should not feel reluctant to use recorders, unless it is because of the time and cost of transcribing the information into typed form for analysis. One of the writers has used recorders in interviews with 10- to 12-year-old children and encountered no difficulty with them. The other writer found that the majority of women whom he interviewed were not frightened by the presence of the microphone. Use of recorders allows the interviewer to give his attention and interest completely to the respondent.

It is very important for the interviewer to be completely at home with any mechanical recording device which he uses. Some subjects may not have had experience with a recording device, and it is often desirable to allow them to hear themselves after a few words are spoken. This seems to allay their apprehensions and often turns into a good "ice breaker." Experience has shown that if the interviewer is comfortable with the machine the respondent is also very likely to be at ease with it.

It is not possible to illustrate the various points made in this discussion by quotes from interviews; but this is not necessary, for Cannell and Kahn have done a remarkable service by presenting a sample interview and a discussion of the techniques used by the interviewer and their apparent effect on the responses of the informant (see 5, pp. 361-374).

Closing the interview. Near the end of the interview, particularly if it has lasted about an hour, it is helpful to let the respondent anticipate the end of the interview by commenting, "Now, just this last question," or something to that effect. The stage is then set for the interviewer's departure. The interviewer can also signal his departure by folding his schedule, standing up, or moving toward the door. The respondent should be thanked for his help and co-operation in the survey and be left with a feeling of satisfaction for having co-operated in a worth-while undertaking. In cases where it is particularly difficult to leave, the suggestion that the interviewer has quite a few calls to make and while he would like to discuss the matter further he just cannot will usually lead to a quick and diplomatic departure.

About the Interviewer

The successful interviewer combines certain personal characteristics with a set of skills and techniques for obtaining scientific data from persons through the medium of conversation with them. Above all else, an interviewer should be a person one would like to know as a friend. He should be able to provoke a favorable reaction from persons upon his first contact with them. He should be businesslike, confident, frank, and pleasant in his approach to the respondent. He should be friendly, smile easily, and have a pleasing appearance and manner. He should be neat and clean. His clothes should be neat, plain, and in keeping with his role of representing an educational institution—which is the case for most research performed by readers of this discussion. Some persons mistake talking a great deal as indicating friendliness or interest. Interviewers, however, should not be too talkative: talking unnecessarily wastes interview time; but, more serious, it may reveal opinions or attitudes of the interviewer which introduce biasing factors into the interview.

An interviewer must be an adaptable person—able to meet and converse comfortably with all classes of persons. He should have a genuine interest in people, or interviewing soon becomes dull and routine work. He should not be discouraged easily by refusals, call-backs where no one is home, or interviews where responses have to be "pried out" of the informant.

As to motivation, the interviewer must recognize that he is attempting to gather scientific data—not just a collection of interesting bits of opinions and attitudes. True, the respondents are encouraged to express their opinions, ideas, beliefs, or attitudes on various topics; but the collection of these data are for purposes of scientific analysis—to test hypotheses or shed light on certain problems. The interviewer must be convinced of the necessity of obtaining data as accurate and detailed as possible. In some areas, he must put aside certain personal ideas if he is going to adhere to these scientific demands. He should not feel guilty about violating the "sanctity of the home" when some questions may be designed to illicit personal data

about the family. Hill (2) reports an extreme case where an interviewer began to feel guilty about asking questions which she felt violated the sanctity of the homes she was visiting. She left some homes without asking all the questions if the respondents became resistive and would fill in the missing items from hearsay or from guessing. Hill had to discard a total of 137 completed case histories because of the failure of this interviewer (2, pp. 28-29).

Annotated References

1. Parten, M. *Surveys, Polls, and Samples: Practical Procedures.* New York: Harper & Brothers, 1950, pp. 331-382. This discussion is oriented toward commercial polling or interviewing practice, but the major portion of the chapter consists of a comprehensive discussion of interviewing procedures. For one of the most detailed discussions the advantages and limitations of the interview method, see pages 79-82.
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Of practical usefulness to home demonstration agents and to home economists and others who work with groups of women in either informal or organized situations is this study of social acceptance in a typical county extension program.

Some Factors Associated with Social Acceptance in Women's Groups

Helen R. Marshall

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WOMEN are given much advice on ways to become better liked in their community groups. This advice is necessarily based on research with school-age, military, and industrial groups, if it is based on research at all, since no investigations have explored social acceptance in women's clubs. This investigation attempts to find some factors associated with the social acceptance of 292 women members of the 25 Home Bureau units (home economics extension service clubs) in one Illinois county.

Subjects and Procedures

The women studied lived both in the towns and on farms in a county where 87.5 per cent of the 1950 population of about 25,000 was classified as rural. By 1950 Census reports, the county was close to the rural Illinois average in home facilities, family income, value of farm products sold, and per cent of farm tenancy, but ranked in the upper fourth of counties in measures of level of education.

In this county, the home economics extension program is sponsored by the County Home Bureau, an organization for homemakers. In the minds of local women there is little differentiation between Home Bureau as an organization and the extension program. In the communities as well as the county, Home Bureau is an important social group and had 693 members at the time of the study. The county organization was begun in 1918, and 14 of the women studied had belonged the 38 years of a charter member. The average length of membership was 12¼ years.

The 292 subjects (42 per cent of the membership) were all but eight of the members attending eight district meetings where two to four units met together in May 1956. The majority of these women had to travel from five to ten miles to the meeting place and unit attendance varied from 21 per cent to 78 per cent of membership. The attendance figures for members and guests were similar to those for these annual district meetings in the three preceding years.

The measure of social acceptance was a three-question and three-choice form of the sociometric test, the measure most used and useful in prediction for other age groups. Each woman was asked to choose three women from those present from her unit as answer to each of three questions:

1. With whom would you like to serve on a committee (any kind)?
2. With whom would you like to spend a day on a trip, such as Handicraft Day?
3. With whom would you prefer to give a local leader lesson?

Instructions stated that the same or different women could be named for each of the three questions. The women were advised to keep their choices secret both as they wrote and in later conversation. Each woman was requested to put her name and that of her unit on the paper; but all groups were told, and the promise was kept, that the author would be the only person to see each paper or to know sociometric scores or individual answers to any of these questions.

In scoring the test, first choice for any question was given three points, second choice two points, and third choice one point. The sociometric score was 1 plus the sum of the weighted choices of each woman by other members of her unit.

The mean sociometric score for any unit was necessarily 19 points since each woman gave 18 points to others. Hence, Bartlett's test of homo-

geneity of variance was used to determine whether the scores in the various units were comparable. The chi square was significant at the 0.01 level. This test result indicates that the units were not alike in how the scores spread out (that is, in some units no one might be either extremely popular or rarely chosen, while in other units almost all women might choose the same member or not choose one or more other members). The lack of homogeneity of variance was not a function of the number in the unit, of differences in sizes of units, of sex of the subjects, nor of county. The author used the same test of variance for the sociometric scores of 278 4-H Club girls aged 10 to 17 years belonging to 23 clubs (varying in size from 4 to 27 members) obtained in the succeeding month in the same county. By Bartlett's test, differences in variance of these clubs were no greater than could be expected by chance. The differences in score spread in the units, therefore, may be either a characteristic of women's clubs *per se* or some function of the percentage attendance of the members (85 per cent of the girls' 4-H Club enrollment was present for testing). Non-homogeneous variance necessitates transformation to make scores comparable for the total sample. Sociometric scores were transformed into standard scores with a mean of 50 and a standard deviation of 10.

Questions on characteristics or experiences of the women were answered on the same sheet as the sociometric test. These questions dealt with the factors listed in tables 1 and 2. Judgmental selection of factors for investigation was necessary because of the lack of prior investigations. The description of the factors in the tables is similar to the wording of the questions. As is evident, questions were answered by checks of "Yes" or "No" or by numbers (for example, number of sisters). All data used in this investigation were taken from the women's answers to the questionnaire sheet except information about election to the three or four elective offices of the unit. The latter data were obtained from the home adviser's office records and include two sets of officers for each unit: those elected in June 1955, and those elected in June 1956. Correlation indices appropriate to the data for each question were used.

The sociometric test and the check list type of questionnaire were administered by the author at the conclusion of a 45-minute home adviser (home demonstration agent) lesson on social acceptance at each district meeting. The women were told

TABLE 1

Factors related to sociometric scores of 292 women

FACTOR INVESTIGATED	CORRELATION INDEX USED	CORRELATION
1. Gave local leader lesson this year Yes (49%)—No (51%)	$r_{pt.bis.}$	0.26
2. Elected an officer of unit Yes (29%)—No (71%)	$r_{pt.bis.}$	0.25
3. Membership in other women's groups Belong (86%)—Don't belong (14%)	$r_{pt.bis.}$	0.13
4. Number of other clubs 0 and 1 (48%)—2 (27%)—3 or more (24%)	$eta_{tria.}$*	0.27
5. Officer of girls' club in high school Yes (68%)—No (32%) (N = 128)	$r_{pt.bis.}$	0.19
6. Status as a mother No children (17%)—Children at home (46%)—Children all adult (37%)	$eta_{tria.}$*	0.58
7. Number of children (including none)	$eta_{quintes.}$*	0.29
8. Brother and sister status None (8%)—Brothers only (20%)—Sisters only (11%)—Both sex siblings (61%)	$eta_{quadria.}$*	0.49
9. Number of siblings, regardless of sex (N = 269)	r	−0.14
10. Number of brothers (N = 236) One (42%)—More (58%)	$r_{bis.}$	−0.21

* Eta multiserial tests relationships of scores to categories and does not indicate a positive or negative direction. The use of eta, the correlation ratio, is not limited by the assumption of linearity of relationship required for all "r's." Eta is the index of correlation appropriate for use with (or as a test of obtained "r's") data for two factors that may or may not consistently increase or decrease together throughout the possible range. Category differences, needed for interpretation of this index, are described in the results section.

TABLE 2

Factors not related significantly to the social acceptance scores of 292 women

FACTOR INVESTIGATED	CORRELATION INDEX USED	CORRELATION
1. Enjoyment of life now compared to that of three years ago More (49%)—Same (43%)—Less (8%)	$eta_{tria.}$	0.07
Same (43%)—Different (57%)	$r_{bis.}$	0.05
2. Age compared to most unit members Younger (17%)—Same (64%)—Older (19%)	$eta_{tria.}$	0.06
Same (64%)—Different (36%)	$r_{bis.}$	0.07
3. Place of residence (in the 15 units where a difference occurred in unit) Farm (65%)—Town (35%)	$r_{pt.bis.}$	0.11*
4. Could belong to additional clubs Yes (74%)—No (26%)	$r_{pt.bis.}$	0.02
5. Belonged to a girls' club in high school Yes (44%)—No (56%)	$r_{pt.bis.}$	0.06
6. Number of children (excluding none) One (21%)—Two (34%)—Three (24%)—Four or more (21%) (N = 242)	$r_{quadria.}$	0.02
7. Years of residence in community Since marriage (29%)	r	0.01
Since moved to (49%)	r	0.00
Total, excluding all life (N = 227)	r	0.02
8. Years of Home Bureau membership	r	0.08
9. Number of sisters (N = 209) One (34%)—More (66%)	$r_{bis.}$	−0.125*

* Significance levels for these r's were between 0.05 and 0.10.

that no studies of this nature had been made before, and the filling out of the questionnaire was put on a voluntary basis. All but eight members attending wrote complete enough answers for use as subjects. The unusually high percentage of questionnaire response (97.3 per cent) was probably due to the respect the women have for the home adviser position, which the author was filling.

Results and Discussion

Factors having correlations with sociometric scores significant beyond the 0.05 level are listed in table 1 and non-significant correlations are listed in table 2. Differences in means of categories in all table 1 correlations were significant beyond the 0.001 level. Most of the correlations listed in table 1 are of the small size (0.15 to 0.35) expected between factors and sociometric scores for subjects as complex and as subject to the influence of many unknown factors as are adult women.

For these women, one current condition associated with social acceptance was that of having presented a local-leader lesson to their unit within the year. Women who had given local leader lessons (45 minutes long, after three to five hours' training by a state extension specialist) had a mean sociometric score of 52.81 while those who had not given lessons had a mean score of 47.64.

Social acceptance scores of elected officers averaged 54.12 while those of other members had a mean of 48.55. The positive relationship found between election to club office and sociometric scores is of particular interest because in very few investigations has it been possible to use as subjects the elected leaders of established groups. Social acceptance has not been found to be related to leadership when leaders have been selected by most other methods or from experimental groups.

Membership in any other woman's group (including church) emerged as a factor associated with social acceptance. Those belonging to other groups had a mean sociometric score of 50.69, while the mean score was 47.05 for those who did not. The eta for three categories of number of clubs also was significant. Sociometric scores of women belonging to none or to one other group averaged 49.99, to two groups, 49.26, and to three or more groups, 52.32. The possibility of belonging to more or additional clubs was not related to sociometric scores (4, table 2).

Serving as an officer in a girls' club in her high school years, as compared with membership only, was related to social acceptance in these women's groups for the 128 women who had had such an experience earlier in life. Former girls' club officers had a mean sociometric score of 52.02 while girls' club members had a mean score of 48.29. As shown in table 2, belonging to a girls' club in high school years was not related to social acceptance in the units.

"Status as a mother" had a surprisingly high correlation (0.58) with sociometric scores. Women with no children had a mean sociometric score of 52.06, those with children living at home (through high school) had a mean score of 51.43, and those whose children were all adult had a mean score of 47.82. Number of children was related significantly to social acceptance only when one category included those women who had no children (7, table 1). When childless women were omitted (6, table 2), number of children was not related to social acceptance. Mean sociometric scores for the one, two, three, and more than three children categories ranged only from 49.51 to 51.10.

The largest differences in mean sociometric scores for any data splits occurred for categories of brother and sister status entering into the eta of 0.49 (8, table 1). Mean sociometric scores were as follows:

No brothers and sisters, 47.25
Brothers only, 51.26
Sisters only, 54.625
Both brothers and sisters, 49.44

All differences in means were significant beyond the 0.01 level (using the mean square within categories to obtain the standard error of the difference between means). These data agree with traditional opinion that "only" children do less well socially than those having brothers and sisters. However, two significant negative r's of sociometric scores with number of siblings (excluding none) in (9) and (10) of table 1, and a negative r approaching significance (7, table 2), contradict another traditional opinion: that large families give experience leading to greater social acceptance elsewhere for the members. These data do agree in indicating that the fewer brothers and sisters, as long as there is at least one, the greater will be the social acceptance of the individual in another group and vice versa. Whether this result was affected by the socioeconomic or educational level of parents of these women (two factors known to relate to the number of children in families in the time span of these women's ages) could not be determined from the data of this investigation.

The lower sociometric scores of women with children (as compared to childless) and the negative relations existing with number of brothers and sisters are not as odd findings as they may seem

at first glance. Both can be subsumed under one generalization, to wit: social acceptance probably depends on how much need or energy one has available for social and emotional involvement with other people. Individuals with children or who had many brothers and sisters may be or have been so entangled with their families as either not to need or to lack energy for the development of social skills and relations with persons outside their family groups. Individuals from small families may have available both the need and energy that may be requirements for above average social acceptance in other groups. Agreeing with this idea are the positive relations found between sociometric scores and the experiences of giving local leader lessons and serving as an elected officer; both of these activities require a large expenditure of time and energy. It is possible also that those women who served as officers of high school age girls' clubs had a need for additional social relations then, and perhaps gained skills useful for above average social acceptance in adult groups.

Other general factors undoubtedly influence social acceptance. The data of this investigation indicate that experience giving specific understanding and perhaps social skill is associated with social acceptance by, in this instance, other adult women. For example, those women growing up in a family of sisters only had an unusually high mean sociometric score given by other women, while "only" children had the lowest mean sociometric scores and those women reared with brothers had the mean sociometric score for the total group.

The factors found not to be related to social acceptance by other women, listed in table 2, include several often cited as causal by the women themselves; such as, differences in age or place of residence, being a newcomer to the community or club, or being too unhappy at the moment to be acceptable to others.

Summary and Conclusions

This investigation studied relationships between various phases of life experience and the social acceptance (sociometric scores) of 292 women members of 25 women's extension groups in one Illinois county.

Social acceptance by members of these clubs was positively associated with having given a local leader lesson within the year, election as a unit officer, membership in other women's groups, and experience as an officer of a girls' club. Childless women had higher sociometric scores than had women with children. Brother and sister status in the woman's parental family was related to social acceptance by other women. Those women with sisters only had the highest social acceptance; "only" children were least well accepted; and a significant negative relation was found between number of brothers and sisters and social acceptance.

Not related to social acceptance by other women were the following: enjoyment of life now as compared to that of three years ago, differences in age or place of residence, the possibility of belonging to additional women's clubs, membership in a girls' club in high school years, and years either of residence in the community or of membership in the group.

The findings were discussed as possible evidence that social acceptance may depend in part on an individual's need and available energy for social involvement with other people and on specific long-time experience with persons similar to those in the particular group.

Planning Space and Equipment Bulletin Ready

Planning home economics space and equipment at the college and university level for both teaching and research is the subject of a new bulletin prepared jointly by the American Home Economics Association and the Home Economics Branch of the Office of Education.

The bulletin—the preparation of which began with a jointly sponsored conference on planning space and equipment in May 1955—was written "to aid those responsible for planning home economics space and equipment to visualize the many possibilities that can help to create an environment that supports, enhances, and inspires the educational program in home economics." It is beautifully illustrated with 100 photographs and drawings from colleges and universities across the country.

"Home Economics in Colleges and Universities—Planning Space and Equipment," Misc. No. 25, may be obtained from the Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C. Price, 65 cents.

School administrators, supervisors, and teachers concerned with homemaking programs in secondary schools as well as parents of homemaking students will welcome this study of values to be gained from a carefully planned and well-understood program of home visits in connection with the school homemaking program.

Values of Home Visiting for Teaching Homemaking

Ruth Sneed

Dr. Sneed is an associate professor of home economics education at Colorado A & M College. The following article is based upon the dissertation for her EdD degree granted by Teachers College, Columbia University, in 1956. Much of the study was made in Kentucky in 1955-56 while the author was teaching at the University of Kentucky and was partly a professional study for the State of Kentucky.

THE personal contacts with families that home visiting provides have been sufficiently rewarding that home economics teachers are encouraged to continue finding time for such visiting. New needs for home visiting have emerged as educational philosophies have changed. The modern teacher teaches the whole child and attempts to help him meet his problems of daily living. The teacher who provides instruction which helps pupils learn the social, emotional, and mechanical skills required for modern living should have an opportunity to see her pupils in relation to their total environment.

Home economics deals with personal and family living. There are almost as many variations in home life as there are families. Many elements of personal and family living can be understood only by first-hand contacts. Sometimes teachers think they know their pupils and have some idea of what the home conditions are like but are greatly surprised when they visit these homes.

Not only should the teacher know the pupil in different aspects of his life, but the pupil should know the teacher away from the classroom. Friendships between pupils and teachers can do much to build better understanding and positive attitudes for effective co-operative work. Home visiting offers opportunities for pupils and teachers to know each other as friends and persons in situations away from the environment of the classroom.

Visits in homes can promote good relations between parents and teachers, as well as improve teacher-pupil relationships. The attitudes which teachers and parents have toward each other can be changed through friendly visits. Too often, teachers let parents know only about the difficulties with their children. Home visits provide an opportunity for the participation of parents in planning the homemaking program. The visit that is made for the purpose of getting acquainted, establishing good relationships, and interpreting the program can help set the stage for co-operative work in planning.

Home contacts are an excellent means of obtaining information for teaching and curriculum planning. Visits in homes enable the teacher to see opportunities for home experiences, to become more concerned about the conditions she sees, and to increase her desire to help pupils improve these conditions.

Home visits also provide an excellent opportunity for the home economics teacher to evaluate classroom instruction. If learning is being used at home, the teacher can see the strengths and weaknesses in what she is trying to achieve. Should little use be made of the classroom teaching, home visiting will help the teacher see why.

The home economics teacher should know the community in which she teaches, just as she should know individuals and families. A knowledge of socioeconomic conditions, for example, clarifies much about the behavior of pupils. While the teacher visits homes, she can also become ac-

quainted with the values and mores of the community. Conversation with families reveals much.

Reasons for the Study

Home economics teachers have for a long time used home visiting to identify classroom learning needs of pupils and to guide home experiences. Nevertheless, how to make the most of home visiting is still a common problem.

It was assumed that the development of good relationships between the teacher and the home was an important factor in the success of a home visiting program and that such relationships contributed to an on-going homemaking program. Too frequently, the young teacher has been at a loss as to how to make home visits so that good relationships are developed. Sometimes it is also a problem for experienced teachers. Therefore, one of the purposes of this study was to find ways of developing good human relationships through home visits.

A second purpose of the study was to explore ways of increasing the educational value of home visiting. Much time, energy, and money is being spent by teachers in making home visits. Teachers need help on how to make visits of greatest value for all.

Procedures

A survey was made to obtain suggestions about making home visits which might be of help to teachers. These suggestions came from three sources: (1) literature dealing with the problem, (2) some social agencies that prepare workers for home visiting, and (3) 46 teachers in 10 states who enjoy and do a great deal of home visiting. These suggestions were tried by six experienced and seven inexperienced home economics teachers in Kentucky. The participating teachers were single, married, and widowed. Some had small children.

The main portion of the study included intensive work for eight months with the 13 Kentucky teachers. Three contacts were made with these teachers during the eight months of the study.

The schools selected were: (1) representative of different occupational and socioeconomic groups of the state, (2) receiving federal and state funds for the homemaking program, and (3) manned by homemaking teachers with not more than five years' experience in the school community. The study was limited to first-year home economics pupils. Ways of using the suggestions in making home visits were discussed with the teachers. Implications of the outcomes from home visiting were also discussed. At the close of the study, the teachers, principals, some pupils and mothers were interviewed.

Findings

Eighty-six suggestions were used by the Kentucky teachers when they visited homes. The suggestions which were used most frequently and were considered by the teachers to have greatest value were:

1. Prepare pupils and parents for the first visit.
   a. Emphasize the fact with pupils that visits will be made when the mother says the time is convenient for her.
   b. Get to know the pupils at school and show a personal interest in each of them.
   c. Explain the purposes of home visiting to classes before visits are made; explain plans for visiting throughout the year.
   d. The pupil, family, and teacher should have in mind the purposes of each home visit, as: to get acquainted, to work on a home experience, to plan for an FHA activity.
   e. When possible and practical, get to know parents at school and community activities, such as church, PTA, basketball games, Homemaker's Club, before visiting the home.
   f. Ask pupils to explain purposes of the home visiting program to parents.
2. Prepare carefully as teachers for making the first visit.
   a. When appointments are made for home visits, keep them without failure. If an emergency arises, be sure that word is sent to the family that the appointment is postponed because of an emergency and that it will be kept later at a suitable time.
   b. Ask pupils in class to help work out a tentative schedule for home visiting. Have pupils ask or call parents to find out whether the time suggested is satisfactory.
   c. Dress simply, tastefully, and appropriately for homes being visited so that the family will feel at ease and the teacher will be comfortable.
   d. Make a careful plan for visiting a home before the visit is made; that is, have a reason for the visit and have in mind some information desired about the home.
   e. In deciding which homes to visit first, select those from which invitations are received or where help is asked.
   f. Study available information about the home

and family before visiting. Information may be obtained from questionnaires and records.

3. Develop good relationships on the first visit.
   a. Near the beginning of the visit, tell the family something good the pupil has done at school.
   b. Be a friendly visitor, not an inspector; that is, do not notice holes in curtains or dust on furniture. Look at something that can be honestly admired.
   c. Keep the visit from being rushed. However, remember the family may have other things to do. Even if the family does not seem busy and the conversation is lively, it is better not to stay until the conversation "peters" out.
   d. Encourage the parents to talk about their interests and activities, such as their daughter's successes, their church affairs, or their offices in clubs.
   e. Make families feel they are on equal level with the teacher by not talking down to them or being authoritative. Make an effort to use language they understand.
   f. Strive to be unassuming and at ease, thus helping the family feel more at ease.
   g. Become interested in the entire family. Be friendly with each of the family members wherever they are seen. Remember to inquire about members who have been former pupils of the teacher.
4. Make home visiting acceptable.
   a. When opportunities are presented, let the family know the teacher as a person.
   b. If other people are discussed, be sure it is from a constructive standpoint rather than as gossip. Discussion of politics should be avoided.
   c. Take pupils home after FHA meetings or some other activity and stay a few minutes for a brief chat. In other words, get into the home gradually.
5. Use the results of home visiting for teaching homemaking classes.
   a. Look for causes of behavior problems of the pupil for the purpose of helping her to adjust better to her family and school situation.
   b. Study home conditions as visits are made to see where teaching in various areas of homemaking is meeting the needs of the pupil and her family. Do this without evidence it is being done, else good relationships may be destroyed.
   c. As homes are visited, evaluate the equipment of the homemaking department to see whether it is in keeping with that found in homes. Use this comparison as a guide when future adjustments are made in the facilities of the department.
   d. Try to find specific information about the quality and kind of the pupil's experiences before she started taking home economics.
6. Guide the home experience program.
   a. Study the time, financial, and equipment limitations the pupil has for carrying out home experiences so that the teacher can make specific suggestions.
   b. Learn to accept the family and the home as they are. When guiding the pupil in home experiences, help her maintain good relationships in her family situation rather than attempting changes that will cause friction in the family.
   c. Study the home situation to get some idea as to the amount and kind of co-operation the family will give the pupil in carrying out home experiences.
   d. Help parents to see the reasons for the home experience program in order that co-operation can be obtained in guiding pupils in home experiences rather than through doing the work for them.
7. Learn about the community while visiting homes.
   a. When visiting homes, notice general characteristics of the community as a whole, such as economic and housing conditions. Listen for comments which give indications of religious beliefs, standard of living, and habits and customs.
   b. To understand family values better, notice what the family considers the more important phases of community life.
   c. To understand the pupil's background better, listen for comments which indicate the kind of participation and interest of the family in community activities.
   d. Watch for conditions in the community which cause attitudes common to the majority of pupils in classes.
8. Use information obtained through home visits in working with the total school.
   a. Make use of home visiting opportunities for interpreting what the school is trying to do.
   b. Listen for comments from parents that appear to be an evaluation of the total school program and which can be passed on to other teachers and the administration.

c. Look for information that will help in planning activities for the whole school. Be careful that this information is kept confidential by all with whom it is shared.
d. Watch for information that might help the principal, the guidance director, class and club sponsors, and other teachers with some of their problems. Use this information in a confidential way.

9. See opportunities for creating good relationships between the home and school while visiting.
   a. Encourage participation of parents in various phases of the school program, including special projects, as: school lunch, FHA, adult program, PTA, recreation for teen-agers, drives.
   b. Explain the underlying reasons for policies and regulations of the school.
10. Manage time to make home visits during the school year.
   a. Visit pupils who live near each other on the same trip.
   b. Plan to visit rural homes during good weather. Homes nearer school can be visited when road conditions are less desirable for traveling.
   c. Plan to do as much home visiting as possible early in the school year, before time is too occupied with other activities.
   d. Make a schedule for visiting homes. Plan an approximate number of visits to make each week, each month, or each semester.
   e. Set aside certain afternoons for visiting in homes each week. Avoid choosing days when there are evening functions at school.

Evaluation of Suggestions

The teachers said that 98 per cent of the suggestions had "much" or "some" value to them in planning, making, and using the results of home visiting. The suggestions helped the teachers improve their planning for, and improvement of, techniques in making home visits. They said the suggestions gave them ideas for obtaining information about homes and helped the teachers feel at ease and recognize the importance of putting the family at ease.

Comments of the pupils, teachers, mothers, and principals revealed that home visiting was valuable for creating good relationships between the teacher and her pupils, the teacher and the families, the homes and the community, the school and the community. The majority of the pupils said that it was easier for them to talk with their teachers after the home visits. Some said it helped their mothers to understand them and what they were doing at school better. Pupils liked and appreciated a social visit from the teacher, but they wanted to know something about her before she visited. It made them more comfortable during the visit if they did know something about the teacher.

The teacher said they received satisfactions from seeming important to people. Some said valuable friendships were made with people from different walks of life. Approximately a third of the teachers said that families were eager for the teachers to visit. They also indicated that families appreciated a friendly visit from them. Attitudes became more favorable toward home visiting as families better understood the reasons for it.

Some of the younger teachers said home visiting helped them overcome shyness, and it made them more tactful in human relationships. The teachers said they felt comfortable and enjoyed visiting, especially if visits were planned in advance, if they were acquainted with parents, and if the pupils had prepared their families for the visit.

Almost half of the mothers said they enjoyed the teachers' visits and thought home visiting was a wonderful idea. A few said they would like visits from all their children's teachers. Both mothers and teachers mentioned a variety of personal benefits received from home visiting.

More than half of the principals said they had very favorable comments from pupils and families about visits made by the home economics teachers. They also said many families were flattered that teachers wanted to visit.

The study showed that home visiting had some pertinent values for the homemaking curriculum. Both parents and pupils visited were more interested and more understanding of the home economics program after the home visits. Visiting enabled teachers to gain a better understanding of pupils and their families so that instruction could be planned around their physical, emotional, and social needs. The teachers said that they gained knowledge about homes that could not be obtained in any other way. Social activities, special interests and abilities, economic status, family relationships and mores, housing conditions, educational background, and home responsibilities of the pupils were revealed.

According to what the teachers said, home visiting helped them broaden the curriculum for high

school pupils and enabled them to extend homemaking education to adults.

Giving parents an understanding of what the homemaking curriculum included and its values helped to interest them and to gain their participation in program planning.

Mothers were more inclined to let daughters do work at home and gave more support to school work as a result of home visiting. Home visiting also helped in the selection of home experiences that were suited to home conditions. Through seeing home conditions, teachers were better able to encourage home experiences that were both an outgrowth of class instruction and appropriate to the home. Home visiting also helped teachers guide the planning, supervision of the work, and evaluation of experiences in the home with the help of the family.

The pupils said they wanted to work harder and increase their learning after they had been visited. They and their families understood better what the teacher was trying to do after she had been to see them.

It was found that home visiting by the home economics teacher had values for the total school program and the community. The results of home visiting shared with other teachers, guidance directors, and administrators improved understanding of pupils. For example, the teachers said they learned parents' attitudes toward the whole school. Families were given an interpretation of the total school program and reasons for school policies. Mothers said that home visiting had increased their interest in the school.

The principals considered the home economics teachers' visiting a good public relations program for the entire school. The home economics teachers' visiting encouraged other teachers in the school to visit. Some teachers and principals said that school issues were better understood, tensions lessened, and poor attitudes were improved by the home economics teachers' visiting.

Home visiting increased the teachers' interest and participation in community activities. Teachers learned about attitudes of families toward the school and community affairs. The teachers who answered the questionnaire said they learned what the community considered important. They also learned about customs, religious ideals, and kinships, and this helped them in working with families in the community.

Recommendations for Preparation of Teachers

1. Encourage future teachers to assist with the work of churches, charities, and welfare organizations where home visiting is done in homes of various socioeconomic groups.
2. Emphasize the values of home visiting in methods courses, particularly the values it has for understanding pupils and creating good relationships with homes.
3. Use role playing in methods classes as a means of helping students grasp some of the techniques of home visiting.
4. Provide opportunities in methods courses and student teaching for alerting future teachers to the social values and satisfactions that can come from home visiting, how it can help them in getting acquainted and becoming a part of a new community.
5. Provide opportunities for home visiting during the student teaching period with the supervising teacher and later alone. Before the student teacher makes visits she should help with the planning and preparation for the visit. The visit should be followed by a discussion of the outcomes and what they mean for home economics and the total school program.
6. Encourage future teachers to accompany home economics teachers on home visits in their community during the summer. Homes should be chosen where pupils and families do not mind two people visiting at once.

Suggestions for Further Research

Further research might include:

1. A study of the characteristics of teachers who are successful and unsuccessful in making home visits
2. A study to determine the difference in attitudes toward home economics where homes have been visited and where homes are not visited
3. A study of the contributions of home visiting to the homemaking program using a similar program without home visiting as the control
4. A study of the difference in planned home experiences when they are guided at school only and when they are guided at school and at home with the family
5. A comparison of home visiting with other techniques of knowing pupils, homes, and families
6. A study of procedures and criteria for evaluating a home visiting program

Make hotel reservations now for the AHEA annual meeting in St. Louis, June 25 to 28

Exploratory work with tubular infrared quartz lamps for cooking was reported in the March 1956 JOURNAL. *That article concluded with the statement that further work was being done to study the use of these lamps specifically for broiling. This article reports the results of that work.*

Infrared Quartz Lamps for Broiling[1, 2]

Elizabeth Beveridge and Eloise Lorch

Miss Beveridge is head of the department of household equipment and Eloise Lorch is an instructor in the same department in the division of home economics at Iowa State College, Ames. The study reported here was conducted at the Agricultural Experiment Station at the College.

WITH the recent development of the infrared quartz lamp, exploratory work[3] was undertaken at the Iowa State College home economics research department to ascertain the possibility of using these lamps for residential cooking purposes.

The exploratory study showed an apparent time advantage for these lamps over conventional electric units when used for broiling. Since the units in portable broilers have lower wattage than have the units in electric ranges, a longer time is required for broiling. Therefore, it seemed that any time-saving afforded by the lamps would be especially advantageous in this type of appliance.

The investigation reported here was undertaken to study more accurately the time and weight-loss differences of meat broiled by the standard electric unit and by the infrared quartz lamps, employing the portable rotisserie-broilers. The rate of heat penetration relative to the positioning of meat under the two sources of heat was also considered.

Equipment

The equipment used in this study consisted primarily of two portable rotisserie-broilers. As is implied by the word rotisserie, each piece of equipment was supplied with a revolving spit. However, the rotary spits were not employed, and only broiling was done in this work. The interiors of both broilers were of highly polished aluminum. The four shelf racks plus the bottom of each broiler provided five possible positions for the placement of food during cooking. In this study only the bottoms of the broilers were used.

The standard broiler had an open-labyrinth unit mounted in the lid, with the resistance coil mounted in glazed cobalt porcelain. The unit was rated at 1,350 watts on the "high" setting.

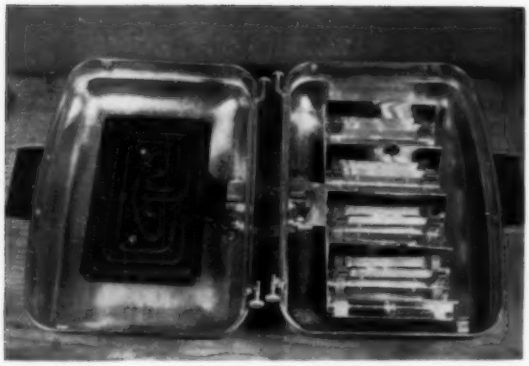
The broiler with the infrared quartz lamp was similar to the standard broiler, with the exception of the heating unit. In the broiler with the lamps, the heat source consisted of four infrared quartz lamps, each rated at 350 watts, totaling 1400 watts. The lamps were tubular, $\frac{3}{8}$ inch in diameter, and approximately $5\frac{1}{4}$ inches long. Each tube was of translucent, milky-white quartz and contained a coiled tungsten filament. The ends of the tube were enclosed in metal clips which slipped into metal clamps on the reflector to complete the electric contact. The four lamps were mounted parallel to the ends of the broiler lid and to each other. The mounting was an Alzak aluminum reflector bent in accordion fashion with four inverted troughs designed to concentrate the radiation downward. Each of these troughs held one lamp.

A tray of cast aluminum with a removable wire grid was provided for use with the standard broiler. The tray for the broiler with the lamps was of highly polished sheet aluminum. Since the trays for the two broilers were of different materials, both were covered with the highly polished side of the aluminum foil toward the heat source in order to give the same reflectance. The sides and the backs of the broilers were also covered with foil. The front of each broiler was open. Since the two trays were of the same size, they were interchanged at random during the tests.

[1] Journal Paper No. J 3056 of the Iowa Agricultural Experiment Station, Ames, Iowa. Project No. 1249, contribution of the home economics research department.

[2] A grant-in-aid by the General Electric Company for the support of this work is gratefully acknowledged.

[3] E. BEVERIDGE, M. PURCHASE, and E. LORCH. Cooking with heat from tubular infrared quartz lamps. *J. Home Econ.* **48** (1956), pp. 201-204.



Broiler lids used in tests. On the left, an open-labyrinth unit is mounted in lid; resistance coil is mounted in glazed cobalt porcelain. At the right, four infrared quartz lamps are mounted in a reflector of bent Alzak aluminum.

Standard broiler used in tests. Cast aluminum tray is in position used. Wire grid was placed directly on tray for tests.

Preparing and Cooking Meat

The meat used in this study was round steak, grade U. S. Good. After the fat was removed from the steak, the meat was ground three times to insure a homogeneous product. Since tests were conducted with five successive replications in each series with a total of four series, the meat for one complete series was purchased at the same time from a local food market.

A wooden mold measuring 5.5 cm by 3.6 cm by 2.0 cm was used to form patties of uniform thickness and shape with each patty weighing 40 grams. Those patties to be used in one test replication were separated with waxed paper, wrapped with aluminum foil in a single package, and frozen at −20°F. A minimum of 24 hours before the patties were to be cooked, the meat was transferred for thawing to a refrigerator set at 40°F. Since all the patties for one replication using both the standard broiler and the broiler with the lamps were removed from the refrigerator at the same time and were exposed to the same room temperature for the same length of time before cooking, it was assumed that they were the same temperature when cooking started. This initial temperature was always below 50°F.

The potentiometer used was an eight-point, continuous-balance, automatic recorder which made it possible to record four temperatures in rapid succession—two positions for each of the two methods—for one replication using both the standard and the infrared broilers.

Although the broiler with the infrared quartz lamps provided instantaneous heat, the standard broiler had to be preheated to become cherry-red in color. So that only the actual time of cooking would be recorded, both broilers were preheated before each test replication. While the broilers were preheating, copper-constantan thermocouples were fastened to the wire grids on the foil-covered trays to minimize movement of thermocouples in the meat.

The meat was removed from the refrigerator and placed in position on the grids. The junction of a thermocouple was inserted horizontally as nearly as possible in the center of each meat patty.

Then the potentiometer chart drive was turned on; the trays with the meat patties were placed on the bottoms of the broilers; and the potentiometer chart was marked to show the time the meat started cooking. A short interval of time elapsed before the potentiometer began to register a temperature rise, since the range of the potentiometer was 50° to 350°F. The internal temperature of each patty was then automatically recorded by the potentiometer each time it came into balance.

As the internal temperature of each patty reached 170°F, the patty was removed from the broiler. The corresponding thermocouple switch was then turned off. After each patty was removed from the heat, it was weighed and the weight recorded.

Limitations of Study

Conditions for the conduct of this study were not ideal. Work was done in a corner of a busy

TABLE I

Number of thermocouple used, time to reach 170° F, and weight for each patty after cooking

TESTS	PATTY AT LEFT REAR QUADRANT OF TRAY			PATTY AT RIGHT REAR QUADRANT OF TRAY		
	Thermocouple Number	Time to Reach 170° F	Weight After Cooking	Thermocouple Number	Time to Reach 170° F	Weight After Cooking
		seconds	*grams*		*seconds*	*grams*
STANDARD BROILER						
Series I						
Replication 1	1	708*	29.0	3	646	28.8
2	7	751*	26.5	5	643*	28.3
3	2	692*	24.9	4	766	25.0
4	8	574	28.8	4	734	28.0
5	3	714	27.7	1	735*	26.9
Series II						
Replication 6	4	738	28.2	6	611	29.9
7	4	749*	26.4	2	564*	27.4
8	6	818	27.9	2	778	29.9
9	1	743	28.7	7	694	30.2
10	2	567	31.6	8	640*	27.7
Series III						
Replication 11	3	578*	25.9	5	590*	26.7
12	4	531*	27.9	8	644	27.6
13	7	564	25.6	1	581	27.7
14	8	672*	25.2	4	864	24.4
15	6	673*	29.3	2	758	25.7
Series IV						
Replication 16	4	993	26.6	6	800*	26.8
17	2	760	29.4	6	884	27.4
18	3	802	27.2	5	811	28.6
19	7	678*	27.5	1	673*	28.4
20	7	805	26.1	5	742*	25.5
BROILER WITH INFRARED QUARTZ LAMPS						
Series I						
Replication 1	6	588	27.1	8	512	28.5
2	6	451	30.5	4	400	29.5
3	5	478	29.9	1	526	27.3
4	7	634	28.9	5	422	30.0
5	6	550	27.9	8	507	26.9
Series II						
Replication 6	7	607	29.0	5	563	28.7
7	5	477	30.7	7	607	28.2
8	7	604	28.1	3	460	30.12
9	4	577	29.9	2	723	27.7
10	7	525	30.0	1	567	28.6
Series III						
Replication 11	4	493	28.8	2	340	30.5
12	5	438	29.4	3	484	28.1
13	2	539	27.2	4	452	29.3
14	7	631	26.1	5	651	25.3
15	3	551	27.5	5	507	28.3
Series IV						
Replication 16	5	668	27.7	1	542	28.9
17	7	720	26.0	3	567	28.1
18	6	623	26.4	8	660	28.1
19	6	577	29.0	4	587	26.8
20	2	509	28.8	4	615	26.9

* Times corrected to compensate for variation in potentiometer recordings occurring with certain sequences of thermocouples.

laboratory where other loads on electric circuits caused some voltage variation. Limitations of space that could be used exclusively for this study made it impractical to use voltage-regulating equipment. Temperature within the refrigerator was not constant, and there was variation in room temperature. Since the only potentiometer available with the range needed for this study was permanently mounted, it was necessary to do the work in this laboratory under the above conditions.

However, the statistical design of this experiment was such that differences of time and weight loss due to differences between heat sources were detectable, regardless of errors which might have been introduced by voltage variation or other factors.

An analysis of variance technique was used to evaluate the effects associated with the four series of test replications, the two methods, the five replications within each series, the two positions,

and the interactions among these factors. Correlation and regression coefficients were computed to determine the relationship of weight loss with cooking time by series.

Results

The method of broiling beef patties had a significant effect on the time required for the patties to reach an internal temperature of 170°F. On the average, the standard broiler required 706.7 seconds, and the broiler with the lamps required 548.2 seconds (tables 1 and 2).

TABLE 2

Analysis of variance of time required for beef patties to reach 170° F

SOURCE OF VARIATION	DEGREES OF FREEDOM	MEAN SQUARE	F*
Series (S)	3	57,543.0	12.77†
Methods (M)	1	502,760.0	79.03‡
SM	3	6,362.0	1.41
Replications within series	16	12,538.5	2.85†
Error a	16	4,506.0	
Positions (P)	1	3,050.0	1.24
PS	3	2,460.0	
PM	1	4,353.0	0.38
PMS	3	11,607.0	2.26
Error b	32	5,141.0	

* Tests of significance were made assuming series a random variable; consequently, interactions with series were used as error terms.
† Significant at P = 0.05
‡ Significant at P = 0.01

When the length of cooking time was equal, there was less loss in weight in patties broiled in the standard broiler than there was in patties broiled in the broiler with the lamps. However, since more time was required for cooking by the standard broiler than by the broiler with the lamps, the total amount of weight loss was greater when beef patties were broiled to 170°F by the standard method (table 3).

The length of time the meat remained under the heat source influenced the final weight of the meat. On the average, patties broiled in the standard broiler lost 0.05 grams for each ten seconds under the heat source, and patties broiled in the broiler with the lamps lost 0.13 grams for each ten seconds under the heat source (table 3).

Under both heat sources, the positioning of the meat in either the left or right rear quadrant of the tray had no significant effect on the time required for the patties to reach an internal temperature of 170°F (table 2).

Although no test method other than subjective observation was used, there seemed to be no appreciable difference in the appearance of the beef patties broiled by the two methods.

Summary

Beef patties of the same size, weight, and shape were broiled to an internal temperature of 170°F in 2.64 minutes less time under the infrared quartz lamps than under the standard electric coil unit. This difference in time required to cook meat patties may be significant to the homemaker and may be even more significant from the standpoint of institutional or commercial food service. For instance, where meat and possibly other foods need to be prepared quickly and in large quantities, the use of the infrared quartz lamp may very reasonably cut the required time for cooking to such an extent that the use of lamp installations may entirely or partially replace the conventional methods now employed.

Recommendations for Further Study

This study gave evidence that future investigations of cooking with the standard electric coil unit and the infrared quartz lamp unit might be carried out along the following lines.

1. To increase the reliability of results of this work:

TABLE 3

Relationship of weight loss with cooking time by series

SERIES	DEGREES OF FREEDOM	STANDARD BROILER	BROILER WITH LAMPS	REGRESSION EQUATION	
				Standard Broiler	Broiler with Lamps
I	8	−0.578	−0.582	$\hat{Y} = 37.71 + (-0.0148)\ X$	$\hat{Y} = 33.956 + (-0.0105)\ X$
II	8	−0.305	−0.846*	$\hat{Y} = 32.488 + (-0.00536)\ X$	$\hat{Y} = 35.64 + (-0.0115)\ X$
III	8	−0.467	−0.977*	$\hat{Y} = 31.04 + (-0.00688)\ X$	$\hat{Y} = 36.62 + (-0.0169)\ X$
IV	8	−0.0248	−0.676†	$\hat{Y} = 27.61 + (-0.000323)\ X$	$\hat{Y} = 34.697 + (-0.0116)\ X$
Pooled	32	−0.3314	−0.7943*	$\hat{Y} = 31.415 + (-0.00549)\ X$	$\hat{Y} = 35.606 + (-0.0132)\ X$

* Significant at P = 0.01
† Significant at P = 0.05

a. Tests should be conducted where voltage is constant or with the use of voltage regulators to hold the voltage constant.
b. Tests should be conducted with resistance coils in the circuit for the standard broiler to make the wattage of the two broilers equal—1,350 watts.
c. The temperature of the refrigerator and the room should be constant for all test replications in all series.
d. The recording potentiometer used should have thermocouples connected directly to the recorder instead of using an arrangement involving a switching mechanism and a junction box.
e. The recording potentiometer used would give more exact information as to length of time required for patties to reach 170°F if the lower limit of the temperatures which could be recorded were equal to or below the temperature of the refrigerator where the meat was stored.
f. A more accurate method of placing thermocouples in the center of meat patties should be devised. A thermocouple might be frozen in each patty; then the couple could be connected directly to the potentiometer.

2. Broiling other foods with infrared quartz lamps might also be done to determine whether time advantages similar to those found in this study are apparent.
a. Solid meat, such as steak and chops, might be used for broiling. In general, according to recommendations for industrial use of infrared lamps, there should be a large surface area as compared with the volume for more uniform heat penetration. However, it would be interesting to compare the time required and the end product of thicker cuts of meats prepared by the standard unit and the infrared quartz lamp unit.
b. Pork, which has a larger proportion of fat to lean, might be broiled by both the standard and the lamp units to determine the influence of fat on the time required for cooking.
c. Work might be done with frozen foods both from the standpoint of using infrared quartz lamps for the thawing of foods and from the standpoint of cooking foods from the frozen state without preliminary thawing.
d. A method of measuring internal temperatures of food broiled on the revolving spit was not devised. If such a method could be devised, time and temperature comparisons could be made on foods rotary-broiled by both the standard and the lamp units.

Memo for Spring Meetings

Spring meetings of state home economics associations are your best chance to get together with other home economists in your state. All-state meetings offer opportunities for professional refreshment, companionship, participation in AHEA and state association affairs.

Start your memo list today of things to do for your state meeting.

Here's a beginning:

- ☐ Take along a home economics guest who's never been to a state meeting
- ☐ Encourage a last year's graduating senior to begin the state meeting habit—many of these first-year members have never attended a state meeting
- ☐ Know at least one of your state's first-year members and help her find her place in the Association and on its committees
- ☐ Encourage college club members to take an active part in the state meeting
- ☐ Urge a prospective member to attend the state meeting
- ☐ Review the AHEA program of work and your section plan for action and co-operate in state efforts to carry them out
- ☐ Plan to participate in discussions and other activities at meetings
- ☐ Be ready to present your ideas on recruitment, other state activities
- ☐ Become acquainted with your state association officers
- ☐ Pay membership dues at the spring meeting
- ☐ Plan for your state to be represented at the AHEA annual meeting in June
- ☐ Speak to your speakers
- ☐ Write at least one note of thanks or appreciation after the meeting

Of special interest to men and to homemakers and others who aid in selection and care of the family wardrobe—as well as to researchers, students, and teachers in textiles and clothing—is this report of a comparative wear study of garments made from one of the newer blends of fibers and from traditional fabrics of all cotton.

Performance of Dacron-and-Cotton Shirts Compared with All-Cotton Garments of Similar Construction[1]

Pauline E. Keeney

Dr. Keeney is a professor of home economics at the Woman's College of the University of North Carolina.

A FORMER study comparing the construction and performance features of blended fabrics of Oxford and batiste with those of similar all-cotton fabrics indicated differences in performance. The advantages offered by the blending of Dacron and cotton that were most apparent in that study were: (1) the maintenance of the original appearance and texture after repeated laundering, (2) the resistance to creasing or wrinkling and the ability to recover readily, and (3) the ease of laundering and finishing such fabrics. Each of these advantages seems dependent upon the care given during laundering. The wrinkle-free appearance is lost if the fabrics are not hung to drip dry. Wrinkles set in the fabrics by wringing and spin drying are as difficult to remove as those in all-cotton garments.

The actual serviceability of garments made of these fabrics would be influenced by many factors that require subjective testing to determine those that might be most important to the consumer in his choice of shirts. As a means of obtaining this information, shirts of Dacron-and-cotton blends in Oxford, batiste, and broadcloth were compared with all-cotton shirts of the same fabrics.

Shirts made of the 65 per cent Dacron and 35 per cent cotton fabrics are comparatively recent additions to the shirting industry. Shirts of like blends are in the higher price range, and comparatively few people have had an opportunity to judge their value. Advertisements emphasizing their desirable features claim that they combine the comfort and attractive appearance of cotton with the long-wearing strength and easy-maintenance qualities of Dacron. Improvement over cotton shirtings is also claimed by stressing the non-wrinkling features and the little attention needed in laundering. Less information is available in regard to the wearing qualities of the fabrics and characteristics which would contribute to the comfort of the wearer.

This part of the research project in progress at the Woman's College compares the performance of Dacron-and-cotton garments with similar all-cotton garments by laboratory observations and opinions expressed by wearers.

Testing Procedures

Seventy shirts were purchased for the study. Forty of them were of 65 per cent Dacron and 35 per cent cotton fiber content. Of these, 13 shirts were of Oxford cloth; 17, batiste; and 10, broadcloth. Thirty shirts were of all-cotton content, with 10 each of Oxford, batiste, and broadcloth.

Ten men, members of the faculty of the Woman's College, were selected for participation in the study. In order to control the type of wear given to the garments, men accustomed to wearing dress shirts for daily wear were selected. Persons likely to come in contact with chemicals, grease, or other forms of heavy soil were excluded. Each participant was issued one all-cotton shirt of each of the three fabric types and at least one shirt of the Dacron-and-cotton blend in each of the three fabric types. The actual number of shirts of the blended fabrics worn

[1] Contribution from the home economics department, North Carolina Agricultural Experiment Station, Raleigh, North Carolina. Published with the approval of the director of research as Paper No. 761 of the Journal Series.

by each participant was determined by the number of garments available in the sizes needed.

Labels and other forms of identification were removed before the coded garments were issued for wear. Soiled garments were returned to the laboratory for laundering. The procedure used was devised from instructions given on the hang tags, procedures developed by home laundering authorities, and experiences in the laboratory testing of fabrics from which the garments were made.

Soiled garments were inspected to locate heavily soiled areas and any spots, stains, discoloration, or fabric damage occurring during wear. Heavily soiled areas, generally at the neck and cuffs, were brushed with a solution of neutral soap. Spot and stain removers were used when necessary.

The garments were laundered in a small rotating commercial washer with semi-automatic control. A 10-pound load was first rinsed in cold water at a 6-inch level for two minutes to remove loose soil particles. This rinse was followed by a 15-minute wash at 120°F with a soap concentration of 0.15 per cent of the fabric weight. A small amount of a powdered bleach prepared for home use was added during the last five minutes of the washing period if the garments were unusually soiled or stained or discolored. Three 2-minute rinses at 100°F ended the washing operation.

Previous experience with Dacron-and-cotton garments necessitated differences in the finishing of the garments. The Dacron-and-cotton garments were hung to drip-dry while the all-cotton garments were dried by moisture extraction. The Dacron-and-cotton garments were given a light or "touch-up" ironing when dry so as to have the same appearance as the all-cotton garments which were ironed damp immediately following extraction. Sleeves and the back yoke of the garments were hand ironed, and the remainder of the garments was finished on a flat-bed press. Ironing temperatures differed for the two types of fabrics. Temperatures suited to rayons (150° to 200°F) were used in the finishing of the Dacron-and-cotton garments. Higher temperatures (300° to 350°F) were necessary for finishing the all-cotton garments.

Several methods were used to obtain information concerning the performance of the garments. The type and amount of soil were evaluated in the laboratory before the garments were returned for further wear. A card was attached to the garments each time they were distributed for wear. Those wearing the garments recorded the number of hours the garments were worn. Space was provided on this same card for any comments or information the wearers wished to express. Questionnaires were submitted periodically as a means of determining the performance features of the garments and of comparing the performance features of the Dacron-and-cotton garments with those of the all-cotton garments.

Participants were encouraged to discuss with laboratory personnel the behavior of the garments during wear. However, an attempt was made throughout the study to indicate no differences in construction to the wearers of the garments.

Results

Comparison of fabrics. Many fabrics used in the Dacron-and-cotton garments were not comparable with the all-cotton fabrics of the same type. Descriptions according to price and thread count are summarized in table 1. In most cases warp

TABLE 1

Price and description of garments in the study

ITEM	DACRON-AND-COTTON GARMENTS			ALL-COTTON GARMENTS		
Total number of garments of fabric types indicated	Oxford 13	Batiste 17	Broadcloth 10	Oxford 10	Batiste 10	Broadcloth 10
Price of garments						
Range	$4.06* to 10.00	$3.50* to 11.00	—	$4.50 to 5.00	—	—
Average	$7.73	$7.17	$4.99	$4.70	$6.50	$3.95
Weave	2/1 Basket	Plain	Plain (4 of rib variation)	2/1 Basket	Plain	Plain (10 of rib variation)
Warp thread count						
Range	94 to 67	103 to 98	142 to 91	99 to 93	—	143 to 137
Average	77	102	121	96	100	141
Filling thread count						
Range	57 to 44	96 to 72	90 to 72	51 to 49	—	62 to 57
Average	49	83	75	50	96	60

* Wholesale price

construction compared more closely than did filling construction or weave characteristics. Greatest similarity was in the batiste type garments.

The Dacron-and-cotton garments were higher in price than those of all-cotton in each of the three fabric groups. The novelty of the fiber probably accounts for both difference in price and the lack of similarity to established fabric construction features.

Opinions of wearers. Information obtained from the 10 participants in regard to their preferences in shirts, the method of caring for shirts, and the part of the garments usually showing first indications of wear is presented in table 2. According to plan, all of the participants were accustomed to wear white dress shirts for work. One person indicated a preference for sport shirts for summer wear.

Broadcloth and Oxford cloth were the fabrics best known and used most frequently. All-cotton content was preferred by nine of the wearers. One wearer had been quite impressed with the performance of an all-Dacron garment.

Laundering was usually done commercially for six of the participants and at home for the remaining four.

The collar and cuffs were indicated as the parts of the garments to show first signs of wear.

Questionnaires were issued during the year to determine characteristics that were being noticed during wear. The features noted and opinions expressed were compiled into a check-list distributed with each garment at the close of the school year. This represented approximately nine months of participation in the study. During this period, four of the 40 Dacron-and-cotton garments and one of the 30 all-cotton garments had been taken from the study. The reasons given indicated that two garments did not fit; the style of two garments was not liked; and one garment was lost. The questionnaires accompanying two garments were not returned to the laboratory.

TABLE 2

Summarization of preferences in shirts, care, and signs of wear

	First	Second	Third
Type of shirt usually worn for work			
Dress	9		
Sport	1 (summer)		
Preferences in fabric			
Oxford	2	4	0
Batiste (fine plain weave)	1	3	2
Broadcloth	7	3	0
Skip-dent	0	0	2
Other	0	0	1
Preference in fiber content			
All-cotton	9	0	0
All-nylon	0	1	0
All-Dacron	1	1	0
Cotton-and-Dacron	0	4	0
Cotton-and-nylon	0	1	0
Other	0	0	0
Where shirts are usually laundered			
At home	4		
Commercial	6		
Part of garment showing first indication of damage			
Collar	7		
Cuffs	5		
Neckband	1		

TABLE 3

Characteristics noted in Dacron-and-cotton garments compared with those noted in all-cotton garments and fabric type cited most frequently

CHARACTERISTICS	NUMBER		PER CENT		FABRIC TYPE CITED MOST FREQUENTLY	
	Dacron-cotton (35 garments)	All-cotton (29 garments)	Dacron-cotton	All-cotton	Dacron-and-cotton	All-cotton
Change in size during wear period	15	7	43.0	17.8	Batiste (7)	Broadcloth (3)
Change in fabric stiffness	7	2	20.0	6.9	Batiste (5)	Oxford and batiste (1 each)
Change in color	11	4	31.6	13.8	Batiste (6)	Oxford (2)
Stretching or sagging of fabric	10	5	28.4	17.2	Batiste (5)	Oxford (1 each)
Irritation during wear	5	2	14.3	6.9	Oxford (3)	Batiste and broadcloth (1 each)
Presence of static electricity						
In normal atmosphere	7	2	20.0	6.9	Broadcloth (3)	Batiste (2)
On unusually cold days	11	4	31.6	13.8	Batiste (4)	Batiste (3)
Warmth of the fabric						
Normal atmospheric conditions	11	2	31.6	6.9	Oxford (6)	Oxford (4)
Cold days	10	4	28.4	13.8	Oxford (6)	Oxford (3)
Hot days	16	11	45.8	37.9	Oxford (7)	Oxford (7)
Coldness or clamminess of fabric						
Normal atmospheric conditions	5	1	14.3	3.5	Batiste (3)	Batiste (1)
Cold days	4	4	11.5	13.8	Batiste (2)	Batiste and broadcloth (2 each)
Hot days	6	1	17.1	3.5	Batiste (5)	Broadcloth (4)
Wrinkling during wear	24	17	68.5	58.5	Batiste (11)	Batiste (8)
Tendency to pill	8	5	22.6	17.2	Batiste (5)	Oxford and batiste (2 each)
Tendency to spot and stain easily	9	3	25.6	10.3	Batiste (6)	Oxford (2)
Retention of soil after laundering	10	4	28.4	13.8	Batiste (6)	Oxford and batiste (2 each)

Table 3 compares characteristics noted in the total number of Dacron-and-cotton garments with those noted in the all-cotton garments. The Dacron-and-cotton garments were cited more frequently than were the all-cotton garments in all characteristics but one, where four garments in each group were said to be cold on cold days. When expressed in terms of the percentage of the total garments in each group, this was the only characteristic in which the all-cotton garments exceeded the Dacron-and-cotton garments.

The characteristics noted most frequently in the Dacron-and-cotton garments and in the all-cotton garments in order of the per cent of each group cited were:

1. Wrinkling during wear
2. Warmth on hot days
3. Changes in size

In addition to the characteristics listed above, the following features were noted frequently in the reports on the performance of the Dacron-and-cotton garments:

1. Change in color
2. Presence of static electricity
3. Warmth of the fabric in normal atmosphere
4. Retention of soil after laundering

The batiste type garments were noted more frequently for both lists of characteristics than were the Oxford cloth and broadcloth garments. Even though they were cited more frequently, the batiste type shirts were quite popular. It was originally planned that these lightweight garments would be worn in early fall and spring, discontinuing their wear during the winter months. Only 2 of the 10 participants wished to discontinue wearing their garments because they considered them too sheer for winter wear. In addition to the fact that there were more garments in this fabric group, it is possible that more attention may have been directed to this group because of an awareness of the difference between these sheer fabrics and the better known Oxford and broadcloth.

Laboratory observations. The record of wear and laundering after the nine months' wearing period is summarized in table 4. Batiste and Oxford cloth garments had been worn during the entire period while the broadcloth garments, which were received much later, were worn for four months. Averages of the batiste type garments were slightly higher than the averages for the Oxford cloth fabrics. The majority of the garments in each group received considerable wear in relation to the length of time they were in service.

There were a few minor changes in garment measurements. Although wearers reported noticeable changes in garment sizes, those recorded in the laboratory were less than 2 per cent and would not be expected to affect the fit of the garments.

Areas of the garments showing heaviest soil were the neckband, folded edge of collar, and cuffs. The Dacron-and-cotton garments showed more evidence of soil than did the all-cotton garments. Another area of soil which might be peculiar to the profession of these participants was the pocket. Many of the garments came back to the laboratory with marks from colored pencils, ballpoint pens, and ink stains in the pocket. Deposits of tobacco were also often found in the pockets. Other soils noted were perspiration stains under the arms, food stains on the front of garments, and occasionally grease and paint spots. The same attention was required in removing soil and stains regardless of fiber content.

The only indications of fabric damage were minute holes, probably coming from cigarette ash burns, in two garments.

The garments responded well to the method of

TABLE 4

Record of wear and laundering after 9 months' use

GARMENTS	ALL-COTTON			DACRON-AND-COTTON		
	Times Worn	Hours Worn	Times Laundered	Times Worn	Hours Worn	Times Laundered
Oxford						
Range	1 to 24	14 to 351	1 to 24	0 to 30	15 to 396	0 to 23
Average	17.8	216.3	16.6	16.6	209.8	15.1
Batiste						
Range	8 to 30	102 to 430.5	8 to 29	7 to 31	84 to 413	7 to 29
Average	21.5	267.6	20.1	19.6	237.5	17.9
Broadcloth*						
Range	3 to 10	24 to 147	3 to 10	3 to 11	32 to 144.5	3 to 10
Average	7.1	91.8	6.5	7.5	93.5	6.9

*Four months' actual wear

finishing applied to each of the two groups. Moisture was necessary to restore the all-cotton garments to a wearable finish. No moisture and only light pressing were necessary to restore the Dacron-and-cotton garments to a comparable finish. It is possible that many of the Dacron-and-cotton garments might have been acceptable with no ironing and pressing if they were not to have been compared with the all-cotton garments. Laboratory personnel were agreed that some pressing or ironing would be necessary for maximum satisfaction.

The batiste type garments required less ironing than did the broadcloth and Oxford types. The most objectionable feature of the unironed batiste garments was the puckering of seams caused by shrinkage of the threads used in stitching the seams. This wrinkling was less objectionable as launderings increased but would have brought rejection of many garments in this group had they been returned without pressing.

The Oxford and broadcloth garments were stiff and rough after drying. Wrinkles formed where fullness or parts of the garments tended to cling together. Pressing softened the fabrics and restored a more desirable appearance and texture. There is no doubt that more of these garments would have been rejected if they had not been finished carefully.

Conclusions

This part of the research project was of great interest to both wearers of the garments and laboratory personnel. In spite of attempts to conceal evidences of fiber content, differences were quite apparent in some garments. The appearance and texture of Dacron-and-cotton Oxford cloth and broadcloth garments differed from the all-cotton fabrics of these types which were often selected for wear. Although the greater similarity was found in the batiste type garments of the two fiber groups, differences in performance were noticed.

Characteristics noted by the wearers of these garments were not in accord with advertising claims. Wrinkling during wear was the feature noted with greatest frequency in both Dacron-and-cotton and all-cotton garment groups. The warmth of the fabrics, presence of static electricity, changes in color and retention of soil did not support the claims for comfort and attractive appearance in Dacron-and-cotton garments.

Neither was proper care of the garments as simple as stated on hang tags and in advertising material. While it was possible to wash the garments and hang them to drip dry, the appearance of the garments could not be maintained without resorting to many of the finishing techniques used in caring for all-cotton garments. Soiled areas, spots, and stains all needed careful attention. Bleaches or whitening agents were necessary to prevent discoloration. Some ironing or pressing was necessary for neat appearance.

Final comparison of the long-wearing characteristics cannot be made at this time. None of the garments in any of the fabric groups was considered worn out. The majority of the participants were eager to resume wear of their garments for another period.

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Health Careers Film Available

"Health Careers," a motion picture produced by the National Health Council and supported in the public interest by the Equitable Life Assurance Society, is now available for distribution. A documentary film, it introduces today's youth and their parents, teachers, counselors, and the general public to all kinds of career opportunities in the field of health.

Prints have been distributed to education and health departments, national agencies and professional societies, state and local health career committees, and major public-service film libraries. General release of prints at a nominal fee of $25 can be arranged with Health Career Horizons, National Health Council, 1790 Broadway, New York 19, N. Y. The film is 16-mm, black and white, sound, runs 13½ minutes, and has full television clearance.

This study reports an interesting and promising attempt to duplicate home wear of an important item of household textiles in a laboratory situation in order to speed up the process of pre-evaluation of textiles designed for home use.

Use of Accelerotor for Laundering Terry Towels, Measured by Changes in Thickness, Weight, and Absorption

Ruth H. Paulk

Mrs. Paulk, a member of the textile research staff at Oklahoma A & M College, was awarded a master's degree in home economics with a major in clothing and textiles at the University of Alabama in June 1956. This is a partial report of her thesis study. Her advisory committee included Henrietta M. Thompson, department head, A. R. Macormac, research associate, and Sarah Browning, assistant professor.

COTTON terry towels, commonly used in the home, should absorb moisture quickly and effectively. Many different weights, in a range of prices, are available in retail outlets. This study was designed to obtain information to help a consumer in her selection of a towel weight which would provide the absorption properties needed for the desired end-use. The Accelerotor was used in experimental work to determine effect of laundering and use on thickness, weight, and absorption.

The Accelerotor is an instrument developed recently by the American Association of Textile Chemists and Colorists for making various use tests on textiles or other materials at a highly accelerated rate so that results can be obtained in a short time (*1*).

The instrument consists primarily of a container or drum, within which a rotor or impeller of special design may revolve at controllable high speeds. The rotor imparts high velocity and kinetic energy to the specimen, with resultant extremely rapid and forceful impacts. The various types of abrasion and flexing achieved, produce within a few minutes results which bear close relationship to the effects of the ponderous, slow-moving forces encountered in wearing, laundering or dry cleaning garments and other textiles over a long period of time (2).

The apparatus is still in the process of development, and no standard test methods have been established. The Accelerotor was selected as the laundering apparatus because of the accelerated speed with which laundering can be accomplished and the abrasive action of the machine which incorporates fabric wear with laundering. These are significant time-saving factors in laboratory procedure.

Data from this study were compared with an earlier unpublished investigation from the University of Alabama textile research laboratory in which a home washing machine was employed and the effect of wear was not considered. Thus, it was possible to evaluate the reliability of the Accelerotor in approximating a home laundering procedure and to judge its effectiveness in simulating service use.

Objectives of the study were:

1. To experiment with and determine the usefulness of the Accelerotor in laundering terry towels in the laboratory
2. To note the effect of the Accelerotor on thickness, weight, and absorptive properties of three weights of all-white cotton terry towels
3. To compare results with an earlier laboratory study which employed a home laundering procedure

Procedure

Ten samples 3¾ inches in diameter from each of three selected, all-white cotton terry towels of light, medium, and heavy weights were laundered 140 minutes in the Accelerotor. Thickness, weight, ultimate absorption, and maximum rate of absorption of the towels were determined under standard conditions of temperature and humidity before and after each 20-minute run in the Accelerotor. Absorbency of the towels was measured in the conditioning room using an apparatus described by Buras, Goldthwait, and Kraemer in the *Textile Research Journal* (3).

Three weights of towels were tested. They were representative of towels purchased in retail stores in Tuscaloosa, Alabama, in the fall of 1954 and used in the home laundering study with which the comparison was to be made. The three selected towels were classified by weight per square yard as light-weight, 9.68 ounces; medium-weight, 11.79 ounces; heavy-weight, 14.77 ounces. According to ASTM Specification D505-40 (*4*), the light- and medium-weight towels were construction type 2 and the heavy-weight towel was type 4.

Preliminary tests were made to determine conditions of Accelerotor operation that would approximate home laundering. Three rotors of different designs are supplied with the Accelerotor; they produce varying degrees of wear on fabrics. Other accessories may be used for different effects. Trial tests were run with terry towel samples in the Accelerotor in order to decide upon the appropriate procedure.

Accelerotor Conditions of Operation for Laundering Terry Towels

Rotor: a 4½-inch straight rotor was selected from the three designs available. The other two rotors tore the preliminary test samples beyond use for continuous runs in the Accelerotor.

Speed of rotor: 2,000 rotations per minute maintained with the control dial of the powerstat set at 30 as recommended (*2*).

Ribbed collar: Use of this accessory is suggested for wet wear and laundering tests (*2*).

Liquor ratio and concentration: 150 ml soap solution (*2*), 0.0375 per cent. This concentration produced suds desirable for home laundering.

Size of sample: A round sample 3¾ inches in diameter was used since this was required in the absorption apparatus (*3*). However, it should be noted that this differs from 4¼ x 4¼ inches, the size recommended for heavy-weight fabrics laundered in the Accelerotor (*2*).

Towel sample edge finish: Federal specification stitch type 304 (*5*) using mercerized cotton thread, size 50.

Laundering and Testing Procedure

Ten samples were marked on each of the three towels of different weights, using a circular cardboard template 3¾ inches in diameter; the samples were machine stitched around the line of the circle using the stitch described above, cut from the whole towels, and conditioned.

Each sample was weighed on an analytical balance; thickness was measured with an automatic micrometer; and absorbency was gauged by determining the maximum rate of flow and the ultimate absorption using the absorption apparatus (*3*).

The samples were laundered singly at room temperature for 20-minute runs in the Accelerotor in a 0.0375 per cent soap solution.

Speed of the Accelerotor for laundering was 2,000 rotations per minute maintained by the control dial of the powerstat set at 30.

After each 20-minute run in the Accelerotor the sample was rinsed under running water for one minute and dried in a preheated electric tumble drier for 10 minutes before placing in the conditioning room.

Following each run, the Accelerotor was drained of soap solution, the ribbed collar was removed and rinsed under running water. The wash chamber of the Accelerotor was rinsed with 10 ml of clear water by closing all openings and setting the apparatus in motion for one minute.

The weight, thickness, maximum rate of absorption, and ultimate absorption of the conditioned samples were determined after laundering.

In accordance with statistical procedure for testing by replicate rather than by duplicate, all samples from one towel were not washed and tested consecutively. Samples were laundered and tested in sets of three; for example, a sample from the light-weight towel was washed 20 minutes in the Accelerotor followed by 20-minute runs with single samples from the medium- and heavy-weight towels. The set of three samples was conditioned and tested further.

The procedure of washing one sample 20 minutes in the Accelerotor and testing for weight, thickness, and absorption was repeated until all samples had been laundered a total of 140 minutes.

Results

Absorption. There was an increase in absorption of the three towels of different weights at the end of 140 minutes' laundering in the Accelerotor; both the rate and ultimate absorption were greater than after the first laundering run of 20 minutes, probably due in part to the washing away of finishing agents used in the manufacture of terry towels. The towels of different weights, however, absorbed moisture in varying rates and amounts. After all launderings, the light- and medium-weight towels had about the same ultimate and maximum rate of absorption, but the rate and ultimate absorption of the heavy towel was from 15 to 20 per cent higher than that of the two lighter towels. Absorption of the three towels increased rapidly

after 80 minutes' laundering; at this point a slowing down or leveling off in absorption was noted.

Thickness. An increase in thickness of the three towels occurred at a rate similar to the rise in absorption, indicating that increased thickness, which is a fluffing up of the towel cotton, might be a factor in permitting more moisture to be absorbed.

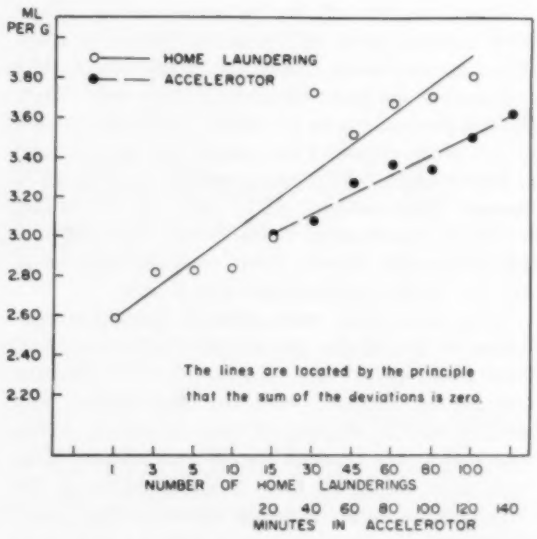
Weight. The three towels consistently lost weight with successive launderings due to the accelerated tumbling action of the Accelerotor. Weight decreased 7 per cent in the light towel and about 4 per cent in the two heavier ones.

Comparison of two laundering methods: Accelerotor and home laundering. As a means of judging the reliability of the Accelerotor for laundering terry towels, a comparison was made of the data in this study with data from a similar study of terry towels in which an automatic pulsator home washing machine was used for laundering (*6*). Although 11 weights of white terry towels, ranging from 9.68 ounces per square yard to 14.77 ounces per square yard, were investigated in the home laundering study, this comparison of data was made with the three towels which were identical (as to construction type and weight per square yard) to the three towels selected for laundering in the Accelerotor.

The results of tests for thickness, ultimate absorption, and maximum rate of absorption of the three towels in the two studies followed the same general trend and to about the same degree; both studies indicate that with successive launderings, terry towels increase in the amount and speed of absorption and in thickness.

There was a difference in weight change of the three towels laundered by the two methods. Towels laundered in the home washing machine remained approximately the same in weight. Accelerotor-laundered towels decreased from about 4 per cent in the medium- and heavy-weight towels to 7 per cent in the light towel; this is to be expected since this is an accelerated laundering *and* wear procedure. It has been pointed out that the study of home-laundered towels did not include service use.

The difference in weight change is the only one noted in a comparison of the two laundering methods regarding the *direction* of the trend of results (see graph). However, there is another difference which seems noteworthy; this is in the dispersion of the data about the mean. In the study made with the Accelerotor, the data on thickness, ultimate absorption, and maximum rate of absorption fit closer to the mean line than data



ULTIMATE ABSORPTION PER GRAM OF COTTON FOR AVERAGE OF THREE TERRY TOWELS (LIGHT, MEDIUM, HEAVY-WEIGHT) LAUNDERED BY TWO METHODS

of these properties for home laundering; thus the Accelerotor produced more uniform results. These differences can be seen in the graph depicting ultimate absorption per gram of cotton for the average of three terry towels laundered by two methods.

To show these differences in dispersion clearly for the two methods of laundering, an average for the three towels was taken of the data for thick-

TABLE 1

Ultimate absorption per gram of cotton for the average of 3 terry towels (light, medium, heavy-weight) laundered by 2 methods

ACCELEROTOR METHOD		HOME LAUNDERING METHOD	
Time Laundered	Average Absorption of 3 Towels	Number of Launderings	Average Absorption of 3 Towels
minutes	*ml per gram*		*ml per gram*
20	3.01	1	2.59
40	3.08	3	2.83
60	3.27	5	2.84
80	3.37	10	2.85
100	3.34	15	3.00
120	3.51	30	3.74
140	3.62	45	3.53
...	....	60	3.68
...	....	80	3.71
...	....	100	3.81
$\bar{X}$	3.314	$\bar{X}$	3.253
S	.218	S	.475
C.V.	6.578	C.V.	14.579

$\bar{X}$ = mean
S = standard deviation
C.V. = coefficient of variation

TABLE 2

Maximum rate of absorption per gram of cotton for the average of 3 terry towels (light, medium, heavy-weight) laundered by 2 methods

ACCELEROTOR METHOD		HOME LAUNDERING METHOD	
Time Laundered	Average Absorption of 3 Towels	Number of Launderings	Average Absorption of 3 Towels
minutes	*ml per minute per gram*		*ml per minute per gram*
20	4.49	1	4.30
40	5.03	3	5.52
60	5.49	5	5.41
80	5.36	10	5.47
100	5.39	15	5.73
120	5.68	30	6.36
140	5.78	45	6.18
...	....	60	6.53
...	....	80	6.60
...	....	100	6.45
$\bar{X}$	5.317	$\bar{X}$	5.855
S	.438	S	.716
C.V.	8.238	C.V.	12.229

$\bar{X}$ = mean
S = standard deviation
C.V. = coefficient of variation

ness, ultimate absorption per gram of cotton, and maximum rate of absorption per gram of cotton. These data are shown in tables 1, 2, and 3. In addition, the mean, standard deviation, and coefficients of variation are shown. The coefficients of variation in the three tables confirm the statement that the Accelerotor gives uniform results.

The difference in time of laundering for the two methods might raise a question as to the reliability of a comparison between the two; towels were laundered in the Accelerotor for 140 minutes and in the home washing machine 100 times. It seems reasonable to accept the validity of the comparison since absorption and thickness values of the towels in the two studies were approximately the same with continued laundering. It is essential, however, that a definite time relationship be established to correlate the accelerated wear and laundering procedure with home service uses and laundering.

TABLE 3

Thickness for the average of 3 terry towels (light, medium, heavy-weight) laundered by 2 methods

ACCELEROTOR METHOD		HOME LAUNDERING METHOD	
Time Laundered	Average Thickness of 3 Towels (0.001 inch)	Number of Launderings	Average Thickness of 3 Towels (0.001 inch)
minutes			
20	54.90	1	56.03
40	56.30	3	60.23
60	54.51	5	58.40
80	58.31	10	60.67
100	58.56	15	64.67
120	60.17	45	57.70
140	60.82	60	61.90
...	....	80	63.33
...	....	100	63.53
$\bar{X}$	57.653	$\bar{X}$	60.718
S	2.480	S	2.925
C.V.	4.302	C.V.	4.817

$\bar{X}$ = mean
S = standard deviation
C.V. = coefficient of variation

Summary and Conclusions

Three weights of white terry towels were laundered in the Accelerotor to note the effects this method of laundering would have on the thickness, weight, and absorption of the selected towels.

The towels increased in the amount of moisture absorbed with the first few launderings; succeeding washes had little effect on towel absorption. Heavy towels improved in amount and speed of absorbency from 15 to 20 per cent more than did light- and medium-weight towels. Towel thickness increased with increased laundering which seems to indicate that greater thickness might improve absorption. Weight loss in the light-weight towel was higher than in the two heavier towels. This appears to indicate that the lighter towel would decrease in total absorptive ability with use and repeated laundering since absorption is related in part to the quantity of cotton in the fabric.

A comparison of data from this investigation with that from an earlier home laundering study, using the same terry towels for both, showed that thickness and absorption increased about the same in the three towels in both studies. There was an appreciable weight loss in Accelerotor-laundered towels due probably to the wear factor included in this laundering operation. More uniform results occurred with tests of Accelerotor-laundered towels than with home-laundered ones.

The advantages of employing the Accelerotor for laboratory studies to approximate wear and laundering as indicated in this study are speed and uniform results.

Since standard test procedures for the Accelerotor have not been established, conditions of operation determined in this investigation might be of use in additional studies using the Accelerotor. One such study might be to point up more specifically the time relationship between the accelerated laboratory procedure of the Accelerotor and consumer use and care.

The homemaker, in considering the three weights

of towels used in this study, might find value in the results which appear to indicate that the heavy towel absorbed comparatively more moisture and absorbed faster than did the medium- and lightweight ones.

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Tentative Program—48th Annual Meeting

American Home Economics Association

St. Louis, Missouri, June 25-28

Monday	**Executive board meeting**
June 24	**State presidents' and councilors' unit of the AHEA council**
	Joint luncheon and meeting of executive board and presidents' and councilors' unit
	Evening—Special meetings of committees and sections' officers and committees
	Evening—College clubs mixer
	Registration during afternoon and evening
Tuesday	**10:15 a.m.—General session**
June 25	**Afternoon—Visit exhibits**
	8 p.m.—AHEA business and council meeting
Wednesday	**9 to 10:30 a.m.—Eye opener**
June 26	**11 a.m.—Professional sections' business meetings**
	12 noon—Alumnae luncheons
	2 p.m.—Professional sections
	College clubs
	4 p.m.—Omicron Nu and Kappa Omicron Phi teas
	8 p.m.—General session (open to the public)
	9:30 p.m.—Dixieland reception
Thursday	**7 a.m.—Phi Upsilon Omicron breakfast**
June 27	**9 a.m. to 10:30 a.m.—Eye opener**
	11 a.m.—Subject-matter sections' business meetings
	12 noon—Alumnae luncheons
	2 p.m.—Subject-matter sections
	College clubs
	8:30 p.m.—Municipal Opera
Friday	**9 to 9:45 a.m.—Eye opener**
June 28	**10:15 a.m.—General session**
	12 noon—AHEA business and council meeting
	2 p.m.—Professional trips
Saturday	**Executive board**
June 29	**State presidents' and councilors' unit of the AHEA council**

"Winter cottons"—comparative newcomers to the dress goods field—offer satisfactory and long wear if properly cared for, the results of this study show. It is one of the first studies reported on the effects of comparative care procedures on these new and popular resin-finished fabrics.

Effects of Laundering and Dry Cleaning on Laboratory Performance of Certain Resin-finished Winter Cottons

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WITH the appearance in ready-made dresses and on yard goods counters of resin-treated, dark-colored cottons suitable for year-round wear, many questions have arisen. Many of the fabrics, often called "winter cottons," and many of the dresses made from them are not in the inexpensive price class long associated with cotton. Many of the dresses have hang tags which recommend that the garment be dry-cleaned, while labels on the fabric bolts or counters often state that the fabric is washable, crease-resistant, and preshrunk within specified limits. Will these fabrics perform equally well with the different types of cleaning, or is one method to be recommended over others? Must one follow the care method recommended? What method should be used if none is specified? If so, which one, and why? In an attempt to find answers to some of the questions, this study was made—a brief beginning in a wide-open field.

The purposes of this study were: (1) to determine the effect of a series of dry cleanings, hand washings, and automatic-machine washings on the physical characteristics of winter cotton fabrics; and, since an abrasion machine was available which made such study possible, (2) to determine the effect of abrasion alternated with these cleaning methods on the physical characteristics of the fabrics.

Procedure

Nine fabrics sold as "winter cottons" were purchased in Syracuse, New York, in November 1953. Sufficient yardage was purchased of each to make possible identical, three-phase laboratory study through a series of 20 dry cleanings, 20 hand washings, and 20 washings in an automatic machine. One fabric, upon analysis, proved to be a rayon-acetate mixture, but it was kept in the study for purposes of comparison. A description of the fabrics may be seen in table 1.

On the control fabrics the following tests were made: thread count, analysis of weave and yarn type, wet and dry breaking strength, wet and dry elongation, fiber content, finish identification, percentage of removable sizing and finishing materials, weight per square yard, crease recovery, colorfastness to cleaning or laundering, colorfastness to light, and effects of mild abrasion on weight, breaking strength, elongation, and crease recovery.

After 1, 5, 10, and 20 cleanings or washings swatches were removed for the following tests: weight per square yard, thread count, wet and dry breaking strength, elongation, crease recovery, and color change. Shrinkage measurements were made after 1, 5, 10, and 20 dry cleanings and after each of the 20 hand or automatic washing periods.

Warp and filling abrasion swatches were carried

through the dry cleaning or washing procedures with the like unabraded lengths, and were removed for testing at the same time as the unabraded samples. After 1, 5, 10, and 20 alternate washing or cleaning and abrasion periods, tests were made for dry breaking strength and elongation, crease recovery, and weight per square yard.

Standard ASTM methods (*1*) were used for all tests for which such methods have been adopted. Crease recovery was a variation from the Monsanto and AATCC tentative methods in that recovery was over a piano wire suspended over a small box rather than in the specimen holder. With five weights and proper timing, this permitted the operator to keep two sets of five samples each under test at the same time. Abrasion was done on the Stout machine, according to the method devised at the University of Illinois (*2*). On a set of controls, and after each dry cleaning, hand washing, or automatic washing, samples were abraded for 1,000 cycles with No. 4/0 metallographic emery paper, then the same samples were cleaned or washed again, then re-abraded for 1,000 cycles. This alternation was continued for the specified interval of 1, 5, 10, or 20 such alternations, the maximum being 20 cleanings or washings and 20,000 abrasion cycles per sample.

The fabrics were dry-cleaned with Stoddard solvent by a commercial dry cleaner, according to his method for cotton fabrics. After dry cleaning the fabrics were steam pressed.

The hand washing procedure was as follows: a thick suds was made, using a neutral synthetic detergent and water at 110°F, of sufficient quantity to cover the goods well. All pieces of the same fabric were put into the suds together and were washed by squeezing, rubbing the folds together lightly, and dunking the fabrics up and down in the suds for five minutes. The suds was then squeezed from the fabrics, and they were put in a rinse water of similar amount and at the same temperature as that at which washed. After rinsing for one minute, by swishing, lifting, and dunking, the goods were lifted from the water and placed in a rinse at 100°F. They were rinsed for one minute, then the latter rinse was repeated with fresh water. As much water as could be squeezed by hand from the fabrics was removed, and they were hung over racks in the laboratory to air dry completely.

Automatic washing was carried out in an agitator-type machine which had a spin cycle at the end to remove excess water. The fabrics were washed through the regular wash cycle with controls set at "warm," using the same detergent as for hand washing. Automatic-washed samples were air dried in the same way as those that were hand washed.

TABLE 1

General properties of fabrics

FABRICS	LABEL INFORMATION	PRICE (PER YARD)	WIDTH	FIBER CONTENT	THREAD COUNT (PER INCH)		REMOVABLE SIZING OR FINISHING	WEIGHT	YARN TYPE		WEAVE	BREAKING STRENGTH			
												Dry		Wet	
					W	F			W	F		W	F	W	F
			inches				*per cent*					*pounds*	*pounds*	*pounds*	*pounds*
Brown R-A	Not labeled	$1.49	41	W-acetate F-viscose	36.8	34.2	6.00	7.18	single Z-twist	single Z-twist	plain	67.40	36.98	39.00	20.05
Blue chambray	Washable, crease resistant	1.29*	45	cotton	72.4	44.4	3.89	4.53	2-ply S-twist	single S-twist	plain	65.15	21.73	52.33	17.10
Rose damask	Preshrunk, crease resistant	1.29*	36	cotton	144.0	71.4	5.00	3.42	single S-twist	single Z-twist	Jacquard	33.23	28.30	38.40	30.95
Gray tweed	Washable, crease resistant	1.49*	37	cotton	37.8	25.4	6.91	6.78	single S-twist	single slub Z-twist	plain	33.60	39.95	35.45	38.70
Striped twill	Preshrunk, crease resistant	1.29*	42	cotton	62.2	51.6	6.95	7.47	2-ply S-twist	single S-twist	2/2 twill	72.95	69.30	71.05	62.10
Chartreuse suiting	Washable, colorfast, wrinkle & spot resistant, preshrunk	1.98	42	cotton	55.6	64.6	3.56	5.14	2-ply S-twist	2-ply S-twist	twill variation	44.85	39.80	55.15	42.80
Brown-yellow suiting	Preshrunk, crease resistant	1.29*	41	cotton	37.8	36.4	3.55	6.84	2-ply S-twist	2-ply S-twist	basket	69.40	40.33	70.68	40.15
Red-brown suiting	Preshrunk, crease resistant	1.29*	39	cotton	39.0	35.8	5.72	7.87	2-ply S-twist	2-ply S-twist	plain variation	68.85	49.95	67.20	57.20
Brown-white suiting	Preshrunk, crease resistant	1.29*	36	cotton	38.0	36.0	7.72	7.63	2-ply S-twist	2-ply S-twist	basket	64.28	42.20	61.05	45.50

* Sale price

Both the hand- and automatic-washed samples, when thoroughly dry, were sprinkled with tepid water, rolled, and left in a plastic bag overnight. They were ironed with a regular type electric hand iron, with temperature set at "cotton" except for the rayon-acetate fabric. All fabrics were pressed first in the warp direction, then in the filling, in the manner believed to be often used at home.

Breaking strength and elongation measurements were made on a Scott pendulum-type tester with a recording device for elongation; crease recovery measurements were made on a Monsanto Wrinkle Recovery Tester; colorfastness to light tests were made in a FDA type Fade-Ometer; and abrasion tests were made on a Stout abrasion machine.

Findings and Discussion

Since the nine fabrics studied varied greatly in texture, weight, and thread count, the behavior or trends of the group as a whole are of interest rather than that of any particular fabric, and are so discussed.

Shrinkage: One of the factors which most affect consumer satisfaction with clothing is dimensional stability through a number of cleanings or washings. Dimensional stability of these fabrics varied greatly with the cleaning method. In general, dimensional stability was satisfactory with dry cleaning, but was unsatisfactory with either wash method. Progressive warp shrinkage in excessive amount (over 2 per cent) occurred in all fabrics with both hand and automatic washing but was more severe with automatic washing. Shrinkage continued through many hand washings (up to 12 or 14) and throughout all 20 automatic washings. Shrinkage data are shown in table 2. Shrinkage determinations were not made on the abraded fabrics.

Weight: Samples tended to become heavier with dry cleaning, whether abraded or not; varied in hand laundering with abrasion and when compared with results in dry cleaning alone; and tended to gain in weight in automatic washing if not abraded but to lose if abraded in either direction. Weight change tended in some instances to correspond to dimensional change, but this was not a common tendency.

Breaking strength: Breaking strength is usually considered to be one of the more valuable criteria of fabric quality and usefulness. Abrasion resistance is another valuable criterion. In this study it was possible to determine breaking strength when the fabrics were dry-cleaned, hand washed, or automatic-machine washed and to determine the effect on strength of these various cleaning methods when alternated with abrasion. This is believed to be the first study reported in which fabrics were cleaned or washed, abraded, then the same samples rewashed or re-cleaned, and returned to the machine for further abrasion. The combination of dry cleaning or washing and abrasion should more nearly indicate fabric performance under conditions of actual use than either factor considered alone. Dry breaking-strength data, all figures corrected to the thread count of the controls to negate the effect of dimensional change, are shown in tables 3 and 4.

In general, dry cleaning and dry cleaning alternated with abrasion did not have an adverse effect on breaking strength of the fabrics studied; filling strength tended to improve with both, with certain exceptions. With hand washing, warp strength de-

TABLE 2

Shrinkage in all cleaning methods (per cent)

FABRIC	TIMES WASHED OR CLEANED							
	1		5		10		20	
	W	F	W	F	W	F	W	F
Dry cleaned								
Brown R-A	0.17	0.50	1.08	3.83	1.17	3.67	1.42	3.33
Blue chambray	0.25*	0.42*	0.00	0.08	0.00	0.17*	0.42	0.17*
Rose damask	0.50	0.83	0.83	0.92	1.00	1.00	1.58	1.08
Gray tweed	0.00	0.17*	0.33	0.33	0.17	0.42	0.50	0.33
Striped twill	0.42	0.00	1.58	0.00	1.67	0.00	1.92	0.00
Chartreuse suiting	0.17*	0.33	0.33	1.58	0.50	1.67	0.83	1.42
Brown-yellow suiting	0.50	1.00	1.42	2.25	1.83	2.00	2.42	2.17
Red-brown suiting	0.25	0.92	0.83	1.67	1.25	1.92	1.75	1.92
Brown-white suiting	0.58	0.50	1.08	1.33	1.33	1.33	1.42	1.42
Hand washed								
Brown R-A	2.75	2.50	3.00	1.83	3.75	3.42	4.58	0.75
Blue chambray	0.25*	1.50*	1.00	2.67*	1.67	2.50*	2.25	3.08*
Rose damask	0.83	0.50	1.58	1.08	2.17	1.42	2.83	1.42
Gray tweed	0.17	0.17*	3.08	0.33	4.67	1.00	4.08	0.50*
Striped twill	2.33	1.50*	2.83	1.08*	4.58	0.83*	4.75	1.50*
Chartreuse suiting	0.75	0.50	1.00	1.25	1.83	2.17	2.08	1.58
Brown-yellow suiting	1.17	1.08	2.42	2.25	3.58	2.25	4.33	2.08
Red-brown suiting	0.67	0.92	1.67	1.25	2.58	1.83	3.58	1.25
Brown-white suiting	0.75	0.83	1.83	1.67	2.08	1.50	2.92	1.00
Automatic washed								
Brown R-A	4.46	2.90	4.86	2.80	4.83	2.70	4.53	1.60
Blue chambray	0.36	1.23*	1.56	1.16*	1.53	2.03*	3.36	2.16*
Rose damask	0.76	0.86	2.03	1.73	2.03	2.00	2.90	2.03
Gray tweed	1.56	0.83	4.10	1.73	3.46	1.46	5.66	1.46
Striped twill	3.23	0.16	5.46	0.70	5.76	1.36	6.70	0.14
Chartreuse suiting	1.30	1.00	2.23	2.76	2.60	3.33	3.00	3.63
Brown-yellow suiting	3.33	3.16	5.70	4.93	6.03	5.16	7.60	4.70
Red-brown suiting	1.53	1.36	4.50	2.83	4.26	2.60	5.96	2.93
Brown-white suiting	1.63	1.06	3.16	2.40	3.16	3.30	5.96	2.86

* Stretch.

TABLE 3

Warp breaking strength (pounds)

FABRIC AND TREATMENT	CONTROL	TIMES CLEANED OR WASHED				CONTROL (W-ABRADED)	TIMES CLEANED OR WASHED AND WARP-ABRADED				CONTROL (F-ABRADED)	TIMES CLEANED OR WASHED AND FILLING-ABRADED			
		1	5	10	20		1	5	10	20		1	5	10	20
Dry cleaned															
Brown R-A	67.4	53.7	76.5	72.5	69.7	62.8	70.1	66.2	66.7	81.5	72.3	69.2	69.0	70.6	75.6
Blue chambray	65.2	63.2	62.5	52.4	62.9	61.0	62.7	59.3	58.2	55.7	63.3	57.5	57.0	57.3	54.8
Rose damask	33.2	31.0	31.9	31.2	32.1	30.6	27.5	31.5	31.8	20.1	33.9	29.8	31.7	29.1	21.2
Gray tweed	33.6	31.3	37.1	38.6	36.4	36.1	35.2	37.4	38.0	37.4	31.8	32.5	33.2	35.1	33.9
Striped twill	73.0	81.7	82.2	85.0	83.4	65.6	84.7	84.6	88.7	70.8	73.8	78.3	82.2	77.3	82.3
Chartreuse suiting	44.9	48.7	48.2	49.2	50.9	46.4	54.9	55.9	62.2	54.4	44.1	53.7	52.0	55.1	56.9
Brown-yellow suiting	69.4	52.2	53.5	52.3	49.2	69.4	70.2	70.5	70.7	73.0	70.0	66.1	68.3	66.4	61.8
Red-brown suiting	68.9	56.8	56.1	54.7	57.1	62.4	68.2	63.6	67.9	65.0	69.4	68.3	64.6	64.9	57.3
Brown-white suiting	64.3	52.7	53.1	63.6	52.9	62.7	69.0	63.7	65.5	68.0	65.5	66.5	65.9	64.1	63.4
Hand washed															
Brown R-A		67.2	56.5	63.8	31.5		77.8	35.9	35.5	71.2		36.4	64.5	71.6	61.7
Blue chambray		51.2	38.5	59.4	14.5		62.2	22.1	17.6	54.0		23.2	65.1	56.1	54.0
Rose damask	same	24.1	22.8	27.0	12.0	same	33.1	31.0	6.8	27.0	same	10.1	31.2	27.1	21.2
Gray tweed		30.5	28.4	31.1	12.3		32.2	32.1	7.7	25.6		18.5	30.4	23.3	26.7
Striped twill	as	66.1	48.5	65.5	25.5	as	72.0	76.1	45.9	59.1	as	23.2	77.2	70.3	65.0
Chartreuse suiting		42.1	43.2	55.9	20.8		43.9	37.8	29.0	63.0		31.6	50.8	56.3	57.6
Brown-yellow suiting	above	50.0	52.0	54.4	22.4	above	54.7	47.0	40.9	63.7	above	28.1	50.4	52.8	53.9
Red-brown suiting		59.7	54.0	57.4	28.9		66.4	50.9	33.8	64.2		37.2	53.3	52.4	51.2
Brown-white suiting		52.4	49.8	58.9	19.8		48.2	39.6	23.6	51.5		23.9	66.6	56.5	59.9
Automatic washed															
Brown R-A		55.2	47.0	49.9	38.1		51.2	51.5	49.4	35.0		47.8	46.4	47.4	26.1
Blue chambray		37.4	23.5	38.5	18.8		31.6	24.0	20.9	12.0		28.7	19.9	23.1	13.3
Rose damask	same	24.4	15.3	20.4	11.2	same	14.2	17.5	6.0	6.8	same	10.4	12.7	10.3	6.6
Gray tweed		23.4	21.2	17.2	13.7		21.0	19.4	16.8	7.1		15.8	18.3	15.3	9.4
Striped twill	as	44.5	43.8	52.8	33.2	as	50.6	30.7	39.0	19.3	as	35.2	38.5	30.3	26.0
Chartreuse suiting		34.7	37.2	40.0	24.6		36.0	33.0	31.3	17.8		33.3	29.0	34.9	22.7
Brown-yellow suiting	above	48.9	35.4	45.8	28.0	above	49.1	37.3	32.5	18.8	above	35.3	34.4	32.4	18.3
Red-brown suiting		48.4	36.5	51.5	30.4		51.7	37.5	38.5	21.9		29.0	34.2	31.6	13.9
Brown-white suiting		44.6	32.8	36.5	27.0		42.8	40.1	37.9	29.1		40.9	33.4	39.5	23.8

TABLE 4

Filling breaking strength (pounds)

FABRIC AND TREATMENT	CONTROL	TIMES CLEANED OR WASHED				CONTROL (W-ABRADED)	TIMES CLEANED OR WASHED AND WARP-ABRADED				CONTROL (F-ABRADED)	TIMES CLEANED OR WASHED AND FILLING-ABRADED			
		1	5	10	20		1	5	10	20		1	5	10	20
Dry cleaned															
Brown R-A	37.0	38.5	42.4	33.6	41.6	34.4	35.9	35.7	30.2	35.6	36.3	30.6	35.3	34.0	33.5
Blue chambray	21.7	21.4	23.7	18.7	25.2	19.1	20.0	20.5	24.5	24.6	22.5	21.0	19.3	22.2	21.5
Rose damask	28.3	28.5	29.0	33.9	32.2	28.4	28.1	29.2	27.1	30.0	27.6	25.8	28.5	27.4	22.1
Gray tweed	40.0	39.4	37.7	41.8	45.4	37.5	40.6	43.3	40.3	39.6	35.0	38.9	39.9	44.8	41.7
Striped twill	69.3	64.1	70.9	74.4	78.3	61.9	78.0	76.5	77.4	67.6	66.7	72.2	70.9	79.5	82.9
Chartreuse suiting	39.8	43.5	40.2	40.4	47.3	39.2	42.8	39.9	42.3	35.8	36.0	41.1	41.5	34.3	36.6
Brown-yellow suiting	49.3	49.2	39.9	46.9	53.8	46.4	44.4	48.9	46.3	44.0	52.5	47.5	53.2	51.4	48.9
Red-brown suiting	50.0	50.5	51.2	55.8	52.4	56.1	56.7	57.0	51.4	50.4	58.6	50.1	52.5	56.3	51.4
Brown-white suiting	42.2	40.2	41.8	44.2	37.1	45.8	41.6	46.9	43.5	48.4	47.4	43.4	43.6	46.2	49.7
Hand washed															
Brown R-A		33.6	31.6	33.8	37.2		37.5	34.1	17.9	21.4		40.6	33.4	27.4	29.3
Blue chambray		22.7	18.5	23.4	21.8		25.5	29.7	8.6	22.8		25.8	23.4	23.6	25.1
Rose damask	same	29.0	25.2	28.4	33.2	same	31.6	29.5	9.2	32.6	same	29.9	27.0	28.8	25.0
Gray tweed		34.6	32.5	37.3	36.6		36.6	29.5	14.2	27.9		37.5	36.0	38.5	46.4
Striped twill	as	57.9	50.5	64.1	80.5	as	65.1	73.8	43.3	83.4	as	58.9	73.3	77.8	84 0
Chartreuse suiting		32.5	33.8	42.8	45.4		41.2	58.0	12.1	25.5		31.8	34.0	47.0	40.0
Brown-yellow suiting	above	47.3	37.6	39.0	49.2	above	38.0	69.6	17.4	37.8	above	51.4	45.6	49.1	42.6
Red-brown suiting		47.6	43.5	49.1	51.7		52.5	70.3	19.8	48.5		56.7	54.8	56.8	54.9
Brown-white suiting		39.6	33.1	36.3	41.9		45.7	64.8	18.6	40.6		48.9	48.5	43.2	47.2
Automatic washed															
Brown R-A		32.0	31.9	24.7	21.8		24.0	17.1	16.0	14.6		20.8	25.1	12.7	7.1
Blue chambray		16.2	17.5	11.5	11.4		16.1	11.7	12.1	8.6		9.1	13.6	11.7	5.3
Rose damask	same	24.6	21.9	20.7	16.3	same	19.0	11.9	10.5	4.5	same	11.2	18.0	10.1	6.2
Gray tweed		25.5	27.0	19.8	23.3		21.1	17.3	18.4	17.4		18.8	19.2	20.0	16.4
Striped twill	as	41.7	62.2	33.4	38.2	as	48.9	36.6	39.5	36.9	as	39.4	43.3	38.7	32.8
Chartreuse suiting		28.9	30.4	18.3	17.4		12.1	15.6	16.5	12.0		18.6	19.2	14.2	11.8
Brown-yellow suiting	above	29.4	37.6	37.8	24.3	above	30.5	24.8	20.6	15.0	above	25.4	31.4	28.0	14.3
Red-brown suiting		37.2	39.4	43.3	31.3		42.5	26.8	24.3	20.8		36.9	41.4	37.0	15.4
Brown-white suiting		30.0	30.3	23.8	23.9		31.9	24.3	20.9	13.5		22.6	29.0	26.8	15.0

creased and filling strength increased. When hand washing was alternated with abrasion, strength tended to increase with warp abrasion and to remain about the same or to decrease slightly with filling abrasion, especially after the 10th washing-abrasion cycle. Since most removable resin would presumably have been removed by the tenth washing, perhaps abrasion caused a firmer bonding of the remaining resin, or a reorientation within the fiber, or a chemical union of resin and fiber.

Greater loss of strength occurred, in general, with automatic than with hand washing. Abrasion alternated with automatic washing had a much more adverse effect on fabric strength than abrasion alternated with hand washing or dry cleaning, in both of which strength often increased. Warp strength was not as adversely affected by automatic washing alone as by hand washing alone, but the reverse was true of filling strength.

The rayon-acetate fabric gave a pattern of performance similar to the other fabrics in all phases of study of strength except when wet, where it was, as expected, much weaker.

Wet strength was little changed by successive dry cleanings or hand washings but was greatly deteriorated with automatic washing, in both warp and filling directions.

Elongation: Elongation was low in all the cotton fabrics and was not much affected by any kind or number of treatments.

Crease recovery: No general agreement has been reached as to a satisfactory standard for crease recovery. The "commercial" standard of 100 degrees, or 55.6 per cent, is considered by many people to be too low. Kaswell (*3*) has used 120 degrees, or 66.7 per cent recovery, as a satisfactory standard. Some of the fabrics in this study were unacceptable by even the lowest standards for crease recovery, while others exceeded the highest standards. The rayon-acetate fabric gave the best crease recovery performance throughout this study. Tables 5 and 6 show results of crease-recovery tests.

In general, warp crease recovery improved with dry cleaning and filling recovery was almost as good at the end of the study as at the beginning. Crease recovery improved when dry cleaning was alternated with either warp or filling abrasion. Crease recovery was improved temporarily by hand washing, in both warp and filling directions, but decreased after the fifth wash period. When hand washing was alternated with abrasion parallel to the crease angle, recovery remained the same or improved; but when hand washing was alternated with abrasion at right angles to the crease angle,

TABLE 5

Warp crease recovery (degrees)

FABRIC AND TREATMENT	CONTROL	TIMES CLEANED OR WASHED				CONTROL (W-ABRADED)	TIMES CLEANED OR WASHED AND WARP-ABRADED				CONTROL (F-ABRADED)	TIMES CLEANED OR WASHED AND FILLING-ABRADED			
		1	5	10	20		1	5	10	20		1	5	10	20
Dry cleaned															
Brown R-A	127	151	140	139	145	142	147	139	150	155	139	146	146	149	159
Blue chambray	110	107	116	120	118	113	119	113	117	117	114	118	116	115	134
Rose damask	96	109	100	117	111	93	100	114	108	125	88	103	116	103	121
Gray tweed	111	125	114	118	120	122	127	111	115	137	114	120	116	119	135
Striped twill	110	124	107	102	110	111	108	107	114	91	109	104	109	104	144
Chartreuse suiting	117	125	121	132	128	129	119	121	121	133	123	125	128	112	137
Brown-yellow suiting	123	140	131	127	132	141	135	133	132	149	137	132	132	131	144
Red-brown suiting	133	146	142	136	134	137	133	129	134	147	145	137	133	130	147
Brown-white suiting	139	141	139	135	135	138	140	139	140	144	141	139	141	139	146
Hand washed															
Brown R-A		145	144	146	156		154	151	151	151		154	152	165	154
Blue chambray		122	135	112	96		111	104	101	93		116	101	115	97
Rose damask	same	127	117	114	94	same	96	93	103	88	same	97	95	103	93
Gray tweed		139	140	133	111		134	119	128	105		123	110	127	127
Striped twill	as	135	124	121	73	as	117	89	119	73	as	118	100	119	96
Chartreuse suiting		136	124	123	102		134	108	117	90		124	113	128	99
Brown-yellow suiting	above	146	145	140	110	above	133	134	128	102	above	141	120	142	122
Red-brown suiting		151	147	139	110		136	127	137	98		139	132	136	112
Brown-white suiting		147	148	141	105		141	129	140	114		139	134	147	123
Automatic washed															
Brown R-A		139	145	148	144		149	144	147	144		144	146	150	148
Blue chambray		89	97	98	96		100	98	97	99		112	99	97	98
Rose damask	same	90	95	97	91	same	102	102	108	94	same	107	102	99	97
Gray tweed		108	116	107	107		119	123	115	106		105	116	112	108
Striped twill	as	107	91	88	82	as	111	98	98	81	as	116	106	87	82
Chartreuse suiting		115	126	112	109		129	116	116	118		95	127	122	111
Brown-yellow suiting	above	115	114	104	99	above	132	122	115	100	above	123	115	104	104
Red-brown suiting		127	113	114	105		129	119	117	109		133	131	107	122
Brown-white suiting		135	120	114	89		131	124	121	109		141	122	114	117

TABLE 6

Filling crease recovery (degrees)

FABRIC AND TREATMENT	CONTROL	TIMES CLEANED OR WASHED				CONTROL (W-ABRADED)	TIMES CLEANED OR WASHED AND WARP-ABRADED				CONTROL (F-ABRADED)	TIMES CLEANED OR WASHED AND FILLING-ABRADED			
		1	5	10	20		1	5	10	20		1	5	10	20
Dry cleaned															
Brown R-A	125	140	142	149	145	131	143	145	147	159	147	142	145	140	154
Blue chambray	109	116	110	132	107	110	127	112	121	121	109	109	111	104	127
Rose damask	90	101	103	115	116	95	106	108	116	115	95	100	110	116	115
Gray tweed	130	133	114	120	130	130	123	123	124	141	127	121	119	120	135
Striped twill	113	120	110	129	114	116	122	126	123	139	126	123	114	122	141
Chartreuse suiting	126	140	116	124	119	118	110	112	117	147	125	131	121	108	124
Brown-yellow suiting	136	132	136	134	134	138	143	138	142	127	139	136	132	134	160
Red-brown suiting	138	140	135	137	130	143	137	143	141	142	148	139	137	137	142
Brown-white suiting	141	144	142	136	135	145	140	138	134	126	145	141	140	138	155
Hand washed															
Brown R-A		160	154	153	151		158	154	163	148		158	157	157	158
Blue chambray		120	116	113	106		105	107	114	117		98	122	114	110
Rose damask	same	113	112	102	101	same	105	104	113	111	same	98	129	110	97
Gray tweed		144	136	133	117		132	125	140	133		126	132	124	124
Striped twill	as	151	141	132	97	as	125	124	133	111	as	136	120	79	98
Chartreuse suiting		134	124	122	106		118	118	131	112		122	121	111	90
Brown-yellow suiting	above	145	136	138	101	above	137	118	154	122	above	136	111	113	108
Red-brown suiting		151	147	140	114		141	127	138	136		139	115	109	103
Brown-white suiting		148	146	140	110		122	138	150	125		145	126	124	101
Automatic washed															
Brown R-A		152	153	155	156		151	154	157	151		143	155	157	155
Blue chambray		93	99	115	105		97	108	115	102		99	110	108	112
Rose damask	same	91	100	98	94	same	97	98	99	91	same	96	100	92	98
Gray tweed		117	118	112	114		119	114	115	121		112	125	116	116
Striped twill	as	116	111	112	104	as	121	118	118	99	as	120	125	112	106
Chartreuse suiting		108	110	114	97		119	125	128	93		115	124	112	101
Brown-yellow suiting	above	118	111	111	99	above	115	108	116	110	above	118	116	106	105
Red-brown suiting		120	112	110	110		123	111	115	99		128	123	115	120
Brown-white suiting		121	108	107	103		119	114	109	100		120	119	107	109

the fabrics decreased in their recovery. With automatic washing, crease recovery decreased from the start, but not so much as in hand washing by the end of the study. With the first abrasion-automatic washing cycle, crease recovery tended to drop sharply, then to remain fairly stationary or to drop only slightly for the rest of the study period.

Colorfastness: All colors were fast to dry cleaning and to hand washing, but several faded in automatic washing, and all tended to lose body with automatic washing. Only one control fabric faded with up to 320 hours' exposure in the Fade-Ometer, but two fabrics dry-cleaned once and exposed for 80 hours faded, and another dry-cleaned 5 times and exposed 160 hours faded. With one hand washing and 160 hours' Fade-Ometer exposure, three fabrics faded, and with one washing and 320 hours' light exposure a fourth fabric faded. With one automatic washing and 80 hours' light exposure two fabrics faded; after 160 hours another faded; and after 320 hours a fourth fabric faded. With five automatic washings and 160 hours' light exposure, a fifth fabric faded.

In summarizing, these points may be made:

1. The winter cottons studied performed better when dry-cleaned than when washed by either method in respect to: dimensional stability, strength, crease recovery, and maintenance of original color and hand.
2. Automatic washing, while having no more adverse effect on crease recovery than hand washing, was accompanied by greater shrinkage, loss of hand, and greater color change.
3. When cleaning or washing was alternated with abrasion, strength and crease recovery often improved as compared to the unabraded fabric samples. The reason for this improvement was not determined.

These results imply that, within limits, such fabrics may improve with wear in certain respects. They should remain satisfactory over a long wear-life, with proper care.

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Students of the family and the political, socioeconomic, or other influences that tend to change patterns of family formation or family living will be interested in this study centered on the popular belief that war or the imminent threat of war results in an increased number of marriages at a lower age than is normal for any given population.

Effect of War upon Early Marriage[1]

Rezan Sahinkaya and Kenneth L. Cannon

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THE general objective of this study was to determine the influence of the Korean War upon the number of marriages occurring between couples under 20 years of age. Three states: Oregon, Nebraska, and Connecticut, were selected to represent different parts of the United States.

Analysis of the data indicated that (1) early marriage increased when America entered the Korean War; (2) early marriage did not decrease with the end of the Korean War; and (3) Oregon, Nebraska, and Connecticut were three different populations with respect to early marriage.

Marriage has become an increasingly popular institution and at the present time 92 per cent of all men and women in the United States are, or have been, married by the end of the childbearing age. This is the highest percentage on record for the nation, and it has been accompanied by a decreasing average age at marriage (*1, 2, 3*). The tendency toward earlier marriage is especially noticeable when comparison is made of data from the 1910 and 1950 censuses on the proportion of young people who were married. The percentage of 20-year-olds who were married was:

1910	8.6 per cent of males	36.2 per cent of females
1950	17.7 per cent of males	48.9 per cent of females

Paralleling the tendency toward younger marriages, there has been a marked increase in divorce. Whether or not these two facts are interdependent is, of course, a matter of speculation (*1*). It seems likely that the person who has acquired a greater degree of maturity and a wider breadth of experience is better fitted to select a suitable marriage partner and to make the necessary adjustments than is the relatively inexperienced teen-ager.

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Various researches have produced evidence relative to the association between age of marriage and general marriage adjustment. Burgess and Cottrell (*4*) found the likelihood of good adjustment increased steadily with age at marriage between 16 and 30 for the women included in their study. The women who married when they neared 30 were twice as apt to have a good marital adjustment as were the women who married under 18. They also found that men who married before the age of 22 had the greatest chance of poor adjustment, whereas those who married between 28 and 30 had the least risk. The men who married after 30 were found to make good adjustments less frequently than those who married from 22 to 30 years of age (*4*).

What are the causal factors which have contributed to the increase in early marriage in recent years? Research studies, the opinions of various students of the family, and the authors' experience suggest that changes in social customs and economic conditions, war situations, and perhaps greater freedom to adolescents are some of the factors. This study was concerned with the effect of one factor, war, upon early marriage.

Does war have the effect of increasing early marriage? Baber (5) states that preparation for

war, which brings military draft and steps up employment, results in marriage for many young people. Then the entry of the country into a war brings a further rush into marriage.

In the present study, the authors did not attempt to analyze the reasons for or the probable success of early or wartime marriages but rather sought to determine whether war has actually been a factor in increasing early marriage.

Oregon, Nebraska, and Connecticut were selected for the purposes of this study.

The following hypotheses were developed for testing:

1. Early marriage increased when the nation entered the Korean War.
2. Early marriage decreased when the Korean War ended.
3. No difference existed between the three states with respect to the percentage of early marriage during the years of 1949, 1951, 1952, and 1954.

TABLE 1

Marriages under 20 years of age for three states

STATES	YEAR	TOTAL MARRIAGES	MARRIAGES UNDER 20 YEARS					
			MALES			FEMALES		
			Actual number	Per cent of total	Percentage increase per 100 males	Actual number	Per cent of total	Percentage increase per 100 females
Nebraska	1949	12,743	825	6.47	46.68	3,841	30.14	11.81
	1951	12,399	1,177	9.49		4,178	33.70	
Connecticut	1949	18,541	559	3.01	27.57	2,844	15.34	10.95
	1951	18,912	727	3.84		3,218	17.02	
Oregon	1949	10,746	839	7.81	59.79	3,749	34.89	11.03
	1951	10,118	1,263	12.48		3,920	38.74	
Nebraska	1952	11,484	1,156	10.07	9.03	3,864	33.65	0.92
	1954	11,307	1,242	10.98		3,840	33.96	
Connecticut	1952	17,677	768	4.34	23.27	3,031	17.15	11.08
	1954	17,814	954	5.35		3,394	19.05	
Oregon	1952	9,998	1,374	13.74	−0.73	3,927	39.28	3.79
	1954	9,567	1,305	13.64		3,901	40.77	
Totals	1949	42,030	2,223	5.29	44.42	10,434	24.82	10.03
	1951	41,429	3,167	7.64		11,316	27.31	
	1952	39,159	3,298	8.42	7.48	10,822	27.64	4.12
	1954	38,688	3,501	9.05		11,135	28.78	

The Problem

The general objective of this study was to determine the effect of the Korean War on early marriage (early marriage is defined where the bride or groom is under 20 years of age) in the United States. In order to accomplish this general objective, two specific objectives were developed:

1. To compare the number and percentage of early marriages between 1949 (the last full calendar year before the United States entered the Korean War) and 1951 (the first full calendar year after entry into the war).
2. To compare the number and percentage of early marriages between 1952 (the last full year of U. S. participation in the Korean War) and 1954 (the first full year after the war's end).

Data on age at marriage were available for only a few states for the years of the Korean War. Three states from different sections of the nation:

Data and Methodology

The Korean War was selected because it was the first war for which data on age at marriage were available. The data were obtained from U. S. Vital Statistics Reports for the states selected (*6*). The form in which the data were available required that early marriage be defined as marriage in which the bride or groom was under 20 years of age. As previously stated, the states were selected because the necessary data were available and because of their location in different sections of the United States. Oregon represents the west coast, which has had a rapid increase in population. Nebraska is one of the middle western farm states which has had little change in total population. Connecticut represents the older, more stable urban

section of the eastern part of the United States. Percentages of early marriage in each state were calculated to determine the increase in early marriage between the years designated in the objectives. Chi square was utilized as the statistical technique to test the differences.

As the study progressed, the authors made comparisons of the population make-up of the three states because of the substantial differences which were found in early marriage. Data were obtained from the 1950 Census on the number of males and females in the 15 to 19 age group (7), and the percentage of the total population which was within this age group was calculated for each of the three states for both males and females.

TABLE 2

Chi square test of differences in marriages under 20 years of age

YEARS	STATE	MALES		FEMALES	
		Degrees of Freedom	X^2	Degrees of Freedom	X^2
Between:					
1949 and 1951	Nebraska	1	71.91*	1	24.90*
	Connecticut	1	18.73*	1	16.26*
	Oregon	1	113.02*	1	21.07*
1952 and 1954	Nebraska	1	4.56†	1	0.06
	Connecticut	1	18.69*	1	17.80*
	Oregon	1	0.04	1	2.74
1949 and 1951	Totals	1	178.92*	1	49.54*
1952 and 1954	Totals	1	8.76*	1	9.06*

* Indicates significance at 1 per cent level.
† Indicates significance at 5 per cent level.

Results

The data in table 1 clearly indicate that early marriage increased from 1949 to 1951. The number and proportion of early marriages increased in each of the three states for both sexes. The percentage increase was much greater for the boys than for the girls, and the differences between the states were also much greater for the boys than for the girls. Chi square values were computed to determine whether the differences might be the result of random variation. The chi square results given in table 2 indicate that for each state and each sex the probability was less than 1 per cent that such differences might be the result of random variation.

A comparison of the totals for the three states given in table 1 is a further indication of the marked increase in early marriage which occurred between 1949 and 1951. The results thus support the hypothesis that "early marriage increased when the United States entered the Korean War."

Data presented in table 1 for the years of 1952 and 1954 indicate a lack of any general decrease in early marriage when the Korean War ended. In fact, the total for the three states indicates an increase in the number and percentage of early marriages between 1952 and 1954. However, on an individual state basis, the number of early marriages decreased rather slightly for males and females in Oregon, and for females in Nebraska, but increased for both sexes in Connecticut and for males in Nebraska. However, the percentage of early marriages increased for both sexes in Nebraska, Connecticut, and for girls in Oregon. Through chi square, the difference in early marriage from 1952 to 1954 was found to be significant at the 1 per cent level for both sexes in Connecticut and at the 5 per cent level for boys in Nebraska. For the three states' totals, the increase in early marriage for both sexes was found to be statistically significant at the 1 per cent level. Chi square results are presented in table 2.

As indicated by data in tables 1 and 2, results obtained in this study do not support the hypothesis that "early marriage decreased when the Korean War ended."

Differences between the states. In general, the data presented in table 1 indicate that Oregon had more early marriages than either of the other states and that Connecticut had the smallest number of early marriages. Furthermore, the increase in early marriage between 1949 and 1951 tended to be less in Connecticut than in either of the other two states. But Connecticut's increase in early marriage between 1952 and 1954 was greater than the increase in the other two states.

The third hypothesis of this study was "no difference existed between the three states with respect to the proportion of early marriage during

TABLE 3

Early marriages in three states

STATE	TOTAL MARRIAGES*	EARLY MARRIAGES			
		Males		Females	
		Actual number	Per cent of total	Actual number	Per cent of total
Nebraska	47,933	4,400	9.18	15,723	32.80
Connecticut	72,944	3,008	4.12	12,487	17.12
Oregon	40,429	4,781	11.82	15,497	38.32

* For the years 1949, 1951, 1952, and 1954.

the years 1949, 1951, 1952, and 1954." In order to test this hypothesis, the numbers of early and total marriages were computed for each state for the four years included in this study. The results are given in table 3. For both boys and girls the proportion of total marriages which were "early" was greatest in Oregon and least in Connecticut. Tested statistically by chi square, each state was found to differ at the 1 per cent level from each of the other states in proportion of early marriage (see table 4).

TABLE 4

Chi square test of significance of differences between three states in early marriage

STATES	MALES		FEMALES	
	Degrees of Freedom	χ^2	Degrees of Freedom	χ^2
Nebraska-Oregon	1	147.83*	1	189.87*
Nebraska-Connecticut	1	1,205.69*	1	3,049.33*
Connecticut-Oregon	1	2,244.85*	1	4,742.32*

* Indicates significance at 1 per cent level.

Thus, the results refuted rather than supported the hypothesis. Hence, with respect to early marriage, each state is a separate population from the other two states.

The differences in early marriage between the years and the states were further tested through the use of analysis of variance. In order to make the data proportional, the number of the early marriages per total of 9,567 marriages was calculated for each state for each year. The total of 9,567 marriages was selected inasmuch as it was the lowest total number of marriages for any of the three states during the four years included in this study. The adjusted data are given in table 5 and clearly reflect the differences in proportion of early marriages in the three states.

The F values obtained from the analysis of variance are given in table 6 and indicate that the differences between the years and between the states are significant at the 1 per cent level for both sexes.

Differences in population make-up. Are the differences in early marriage between the three states explainable in terms of the differences in the population make-up? For instance, is Oregon's higher rate of early marriage due to a much larger proportion of its total population in the age group under 20 years of age? In order to test this explanation, data were obtained from the 1950 Census in the total population, the number of males, the number of females, and the number of each sex in the 15- to 19-year age group. The results are presented in table 7. For both sexes, Nebraska has the highest percentage of their total population in the 15- to 19-year age group, 3.67 per cent, whereas Connecticut has the smallest, 3.03 per cent. The differences in population make-up are so slight that they could explain only a small fraction of the variation between the states in early marriage. Furthermore, Oregon which had the largest proportion of early marriage, had a smaller percentage of its population in the 15 to 19 age group than Nebraska had.

TABLE 5

*Number of early marriages in each state each year per 9,567 marriages**

YEAR	MALES			FEMALES		
	Nebraska	Connecticut	Oregon	Nebraska	Connecticut	Oregon
1949	619	288	747	2,884	1,467	3,338
1951	908	368	1,194	3,225	1,628	3,707
1952	963	416	1,315	3,219	1,640	3,758
1954	1,051	512	1,305	3,249	1,823	3,901

* 9,567 was the lowest total number of marriages in a state during the four years included in this study.

Discussion and Summary

The substantial increase in early marriage that occurred between 1949 and 1951 is probably indica-

TABLE 6

Analysis of variance of number of early marriages per 9,567 marriages

SOURCE OF VARIATION	DEGREES OF FREEDOM	MALES			FEMALES		
		Sum of Squares	Mean Square	Variance Ratio F	Sum of Squares	Mean Square	Variance Ratio F
Years	3	288,342.34	96,114.11	9.92*	297,353.00	99,117.66	20.22*
States	2	1,144,398.17	572,199.08	59.09*	8,925,168.70	4,462,584.33	91.04*
Remainder	6	58,101.16	9,683.52		29,412.00	4,902.00	
Total	11	1,490,841.67			9,251,933.70		

* Indicates significance at 1 per cent level.

tive of the effect of war upon early marriage, namely, that war tends to increase early marriage. If so, the effect was felt in all three states and for both sexes.

TABLE 7

*Proportion of population aged 15 to 19 years of age in 1950**

STATE	TOTAL POPULATION	MALES	FEMALES	MALES 15 TO 19 YEARS			FEMALES 15 TO 19 YEARS		
				Actual Number	Per cent of Total Population	Per cent of Male Population	Actual Number	Per cent of Total Population	Per cent of Female Population
Nebraska	1,325,510	667,332	658,178	48,605	3.67	7.28	48,660	3.67	7.39
Connecticut	2,007,280	988,497	1,018,783	60,848	3.03	6.16	60,810	3.03	5.97
Oregon	1,521,341	772,776	748,565	47,652	3.13	6.17	49,086	3.23	6.56

* Source reference (7)

The fact that the end of the Korean War was not accompanied by a decrease in early marriage may indicate that the end of a war fails to result in a decrease in early marriage, or it may possibly be that other factors responsible for the long-time trend in early marriage offset any possible decrease which the end of the war might have brought about. It is possible also that an effect of war—increased early marriage—may remain after the condition responsible has ceased to exist. Certainly under the prevailing conditions the end of the war did not bring with it a decrease in early marriage.

The fact that the three states selected are actually different populations, rather than samples from the same population, indicates that various social and cultural situations and factors affect the age at which people marry. Further study might well seek to identify the various factors involved.

If data on age at marriage for each month had been available, a more exact comparison would have been possible. In such a case, the 12 months immediately preceding the Korean War could have been compared with the 12 months immediately after the start of the war. Similar comparisons could have been made at its end.

The trend toward early marriage and particularly the large increase of early marriage among boys has implications for the nation's educational institutions. Much needs to be done to prepare young people more fully for marriage and for early marriage. A more realistic concept of what marriage involves might be imparted through education with the hope that such a concept would aid couples to make the adjustments which marriage involves. There is a need to develop policies with respect to youngsters who marry before completing their high school training. Certainly home economics has a real contribution to make to boys as well as girls in helping to prepare them for marriage. Parents are involved in many ways. To many parents, the marriage of a teen-age son or daughter represents a blasting of plans and hopes. Often the parental family assumes part or all of the responsibility of financing the marriage of their son or daughter or at least of their needed vocational training.

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Seattle Group Distributes Career Material

Co-operating with homemaking teachers in the state on recruitment, the Seattle HEIB's assembled and sent a packet of career and scholarship information to some 450 teachers in junior and senior high schools to help them encourage girls to choose home economics.

Parents as well as family life students and research workers will be interested in this study to investigate changes in attitudes and practices in child rearing from one year to the next.

Attitudes and Practices of Mothers Rearing Their Children from Birth to the Age of Two Years[1]

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ATTITUDES are those manifestations of personality which indicate the meanings one associates with certain objects or ideas. They develop from the life experiences of the individual and influence both his overt and covert behavior. While attitudes tend to be fairly constant, they may change as the life experiences change. As parents' experiences change while their children grow older, and while other shifts in the life situations occur, the attitudes and practices parents use in rearing their children can also be expected to change. A study of the attitudes and practices the same mothers use from one year to the next should reveal some of the similarities and differences related to these variations.

Such a longitudinal investigation is under way in the department of child development and family relationships at the Pennsylvania State University, in which the attitudes and practices of mothers of children on the nursery school waiting list are being traced from year to year. This paper concerns child-rearing practices and attitudes of mothers rearing their children from birth to two years (*1*).

An interview, conducted with the mothers in 1954 when their children were under one year of age, and a second interview a year later were designed in relation to existing theory of personality development in order to (1) obtain information describing attitudes and practices of the mothers in rearing their children, (2) discover factors related to attitudes and practices, and (3) test the following hypotheses:

1. Relationships exist among attitudes and practices of mothers during the child's first year.
2. Relationships exist among attitudes and practices of mothers during the child's second year.
3. Relationships exist in attitudes and practices of mothers between the child's first and second years.

Procedure

The study population consisted of the 56 mothers of 56 children, born between January 31, 1953 and January 31, 1954, who had been registered almost at birth for later enrollment in the nursery school at the Pennsylvania State University. Because the mothers were wives of University faculty and staff or of local businessmen, they constitute a selected middle class population; as a group they are more highly educated and of higher socioeconomic status than are mothers in the general population. Moreover, they were interested in having their children participate in the nursery school.

Discrepancies may exist between actual facts and the responses of the mothers to the interviewer's questions; the attitudes about child-rearing practices are assumed to be more influential than the practices themselves. The interviewer's statements reflect how the mothers perceive the situation, and the mothers' statements were accepted at face value.

A letter explaining the purposes of the study was sent to the mothers, followed by a telephone call to arrange an appointment. The interview schedules were devised to cover the areas suggested by the objectives and hypotheses; during the spring of 1954 an interview was held with each mother, and approximately a year later a second interview was conducted. The mean interval between interviews was 11.1 months, with a range from 9 to 15 months. Each interview took approximately one hour.

Theoretical material and conceptual framework concerning the socialization process, as developed by Erickson (*2*), Baldwin (*3*), English and Pearson (*4*), and others (*5, 6*) have provided a basis for portions of the substance of the interview schedule. The work of Sears and his associates (*7, 8, 9, 10*) was also suggestive of method and content of our inquiry, and some of their questions were repeated in this and a related study. The same was true of the work of Jersild (*11*). Questions concerning background information were asked first, followed by open-end questions to which mothers were encouraged to express

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their opinions freely. They were told that there were no right or wrong answers but that we were interested in finding out how things happened in their families. The interviewer recorded the mothers' responses in their own words directly on the schedule.

Data were analyzed using frequency distributions, tests of statistical significance of differences between percentages, and correlational procedures.

Results

Of the 56 children, 28 happened to be boys and 28 girls. At the time of the first interview, the mean age of the boys was 7.4 months, with a standard deviation (SD) of 3.2 months, and of the girls, 8.6 months (SD=3.6); during the second interview, the boys' mean age was 18.9 months (SD=3.6), and the girls' 19.0 months (SD=3.9).

With the exception of two fathers and three mothers, all the parents were native-born. Of the 56 fathers, 67.8 per cent were in their late twenties or early thirties; of the mothers, 69.6 per cent were in this age group. For 54 pairs of parents the marriage was the first; its mean length at the first interview was 5.8 years, with a range from 1.3 to 12.9 years. A large number of fathers (69.1 per cent) and some mothers (32.1 per cent) had or were taking graduate work. Two-thirds of the fathers work in an academic capacity for the University.

In all cases, both parents were living and together; only one child, a boy, had been adopted. Of the 56 children, 22 were "only" children, 20 the younger of two, 12 the youngest of three, and two the youngest of four or five. Boys and girls were equally divided in all these categories. The mean number of children per family was 1.9. Two-fifths of the mothers had thus had experience handling only one child, and one-fourth had had experience with three or more children. When asked concerning the birth of their child, the mothers reported few complications and did not regard the delivery as a particularly difficult experience.

The following changes occurred in these families between the first and second interviews:

1. The average family size increased: Five mothers had had a baby, and eight more mothers indicated they were pregnant at the time of the second interview.
2. The educational level of the fathers had increased: Of the fathers, 12 had completed further education, while four of the mothers had taken advanced work.
3. The occupational level of some of the fathers had changed: Six had received promotions, while three had changed positions.
4. Five more mothers were working outside the home the second year, but 8 out of 10 were still not gainfully employed.
5. The mothers' self-rating on health had improved somewhat, eight rating themselves "excellent" the second year who had rated themselves less well the year before.
6. The average number of persons per home increased slightly: During the first year five families had relatives or roomers, and the second year nine had relatives, roomers, or servants living with them.
7. Housing facilities had changed over the year for 12 families most of whom had moved from apartments to newly constructed houses.

Table 1 shows the number and percentage of responses of mothers to selected questions in the first interview concerning child-rearing and family practices. As shown here, mothers of boys and mothers of girls differed little in the methods of feeding preferences they said they used (Q 22a, 22b, and 22c). For example, each mother was asked how she fed

TABLE 1

*Mothers' responses to questions on child-rearing and family practices, first year, by number and percentage and sex of child**

QUESTION AND RESPONSES	BOYS (28)		GIRLS (28)		TOTAL (56)	
	number	*per cent*	*number*	*per cent*	*number*	*per cent*
22a *How child was fed as an infant*						
Bottle fed	10	35.7	9	32.1	19	33.9
Breast fed less than 3 months	9	32.1	9	32.1	18	32.1
Breast fed 3 months or more	8	28.6	8	28.6	16	28.6
22b *Mother's feeling about feeding child*						
Preferred bottle	10	35.7	9	32.1	19	33.9
Preferred breast	9	32.1	6	21.4	15	26.8
Forced to bottle feed	8	28.6	10	35.7	18	32.1
22c *Child's reaction to foods other than milk*						
Refused	3	10.7	6	21.4	9	16.1
Apathetic	9	32.1	4	14.3	13	23.2
Avid	13	46.4	15	53.6	28	50.0
22d *Mother's feeling about child's reaction to new foods*						
Bothered	4	14.3	2	7.1	6	10.7
Matter-of-fact	11	39.3	5	17.9	16	28.6
Pleased	11	39.3	18	64.3	29	51.8
26 *Schedule of feeding baby*						
Regular feeding schedule	5	17.9	2	7.2	7	12.5
Semi-demand feeding	10	35.7	6	21.4	16	28.6
Demand feeding	13	46.4	20	71.4	33	58.5
25 *Attention given baby when he cries*						
Waited for a time	6	21.4	4	14.3	10	17.9
Investigated cause first	13	46.4	8	28.6	21	37.5
Picked baby up	9	32.1	16	57.1	25	44.6
27 *Husband's responsibility for household jobs*						
Little	5	17.8	8	28.6	13	23.2
Some	8	28.6	13	46.4	21	37.5
Much	15	53.6	7	25.0	22	39.3
28 *Schedule of family routines*						
Nearly always a schedule	12	42.8	12	42.8	24	42.8
Fairly flexible framework	11	39.3	14	50.0	25	44.6
Seldom have a schedule	5	17.9	2	7.2	7	12.5

* The total number on each question varies slightly, due to unanswered questions and unusable responses.

her child as an infant. Thirty-five and seven-tenths per cent of the mothers of boys had fed by bottle, as compared to 32.1 per cent of the mothers of girls. Similar proportions of the mothers preferred bottle feeding. Half of the mothers of both boys and girls said their child's reaction to foods other than milk was avid, which, however, appears to have pleased the girls' mothers more than it did the boys'. A larger proportion of the girls had apparently been fed on demand (71.4 per cent) as compared with the boys (46.4 per cent).

The mothers were asked other attitude questions:

All babies cry, of course. Some mothers feel that if you pick up a baby every time he cries, you will spoil him. How do you feel about this? (Q 25).

To a larger extent, girls' mothers reported they picked up the baby whenever she cried (57.1 per cent) as compared to the boys' mothers (32.1 per cent); four out of five of all the mothers, however, said they did not let the child "cry it out." While numbers are small, the following questions can be raised: If these sex differences are real, are mothers more sensitive to daughters' cries than to sons' cries? Are mothers of daughters more emotionally expressive to their children than mothers of sons? Or are mothers more expressive to daughters than to sons? If these interpretations are correct, what importance have they in the children's early training experience in performing the social-sex role?

Variations occur, too, in relation to the responsibility the fathers were said to have; the mothers were asked:

In some families the work is more or less divided between what the wife does and what the husband does. For instance, it will be the wife's job to wash the dishes and the husband's job to mow the lawn and take care of the furnace. In other families, everybody helps with everything. What do you think about this? How does this work in your family? (Q 27).

During the first year more than one-half of the boys' fathers were rated as having much responsibility, whereas only one-fourth of the girls' fathers were so rated. There was little difference, however, between the boys' and the girls' families in the schedule of family routines (Q 28).

Table 2 shows the responses of mothers to questions on child rearing during the second interview. At this time, their children were approximately 19 months old. There was little difference in the way the mothers evaluated their sons' and daughters' development for their age (Q 29). The mothers of sons tended to allow them slightly more activity than mothers did their daughters—53.6 per cent of sons' compared with 42.8 per cent of daughters' mothers (Q 30). Perhaps this is additional evidence of training in the appropriate social-sex role or differences in maturity between the boys and the girls. Mothers were asked this question concerning feeding:

Some people believe a child this age should eat at the table with other members of the family, while other people think he should be fed separately. How do you feel about this?

To a greater extent, girls were fed with their families and required less help than did boys (Q 34). Approximately 4 out of 10 boys and 6 out of 10 girls were fed with the family. Probably developmental dissimilarity accounted for this difference, assuming the girls are somewhat ahead of the boys in their all-round development. There was little indication of real variations in the concern which the boys' and girls' mothers had about feeding (Q 35) or in the frequency of thumbsucking (Q 37).

Answers to questions concerning toilet training (Q 39, 42, 44) are summarized in table 3. Nearly two-thirds of all the mothers had not begun training their children at the age of one year. Eleven of the 28 boys' mothers as compared with 6 of the girls' mothers said they had not started training at the time of the second interview (Q 42). Of the children whose training had been started, a larger proportion of the girls were said to have gotten the idea and to be able to "tell mother." There was little difference in

TABLE 2

*Mothers' responses to questions on child-rearing and family practices, first year, by number and percentage and sex of child**

QUESTION AND RESPONSES		BOYS (28)		GIRLS (28)		TOTAL (56)	
		number	*per cent*	*number*	*per cent*	*number*	*per cent*
29	*Mother's evaluation of child's development for his age*						
	Slow	3	10.7	1	3.6	4	7.1
	Average or normal	14	50.0	17	60.7	31	55.4
	Advanced	11	39.3	10	35.7	21	37.5
30	*Amount of activity allowed*						
	Restricted activity	3	10.7	3	10.7	6	10.7
	Some activity	10	35.7	13	46.4	23	41.1
	Much activity	15	53.6	12	42.8	27	48.2
32	*Place of feeding child*						
	Fed separately	9	32.1	4	14.3	13	23.2
	Sometimes fed with family	7	25.0	6	21.4	13	23.2
	Fed with family	12	42.8	18	64.3	30	53.6
34	*Amount of help given in eating*						
	Requires much help	7	25.0	1	3.6	8	14.3
	Requires some help	8	25.0	9	32.1	16	28.6
	Requires little help	12	42.8	18	64.3	30	53.6
35	*Seriousness of mother's concern with child's feeding*						
	Mother has many concerns	7	25.0	3	10.7	10	17.9
	Mother has some concerns	5	17.9	9	32.1	14	25.0
	Mother has few or no concerns	16	57.1	16	57.1	32	57.1
37	*Amount of thumbsucking*						
	Much thumbsucking	1	3.6	4	14.3	5	8.9
	Some thumbsucking	9	32.1	10	35.7	19	33.9
	Little or no thumbsucking	16	57.1	14	50.0	30	53.6

* The total number on each question varies slightly due to unanswered questions and unusable responses.

the degree of satisfaction which the mothers of boys or girls felt about this training.

The mothers were also asked about the practices they used in connection with naptime and bedtime with their children. Little difference was revealed between the girls and the boys. Only a small proportion allowed their children to omit naps. At bedtime, nearly two-thirds of the mothers said that the children were expected to stay in bed to sleep (Q 47).

When asked concerning their child's understanding of rules (Q 49), a majority of the mothers said they used some rules and that the child obeyed much of the time. However, twice as many boys' mothers as girls' mothers said they used very few or no rules. Perhaps this difference between boys' and girls' mothers' behavior reflects different expectations mothers have for sons and daughters—increased independence for sons, for example, and more rigid conformity to standards by daughters. The dynamics of the relationship between mother and daughter as compared with mother and son may also account for sex differences.

In order to obtain an indication of role expectations of family members in terms of household jobs during the second year, the mothers were asked to answer the following question:

> Some families believe it is best for each person to have his own special jobs to do; others feel it is better to have each person do what he thinks needs doing. What do you think about this? How does this work in your family? (Q 52).

Again answers in this area show interesting differences between mothers of boys and girls. As shown in table 3, more than one-third of the mothers of girls (35.7 per cent) were rated as indicating that there was little flexibility in the distribution of household chores and that jobs were generally assigned. With mothers of boys, nearly one-half (46.4 per cent) reported there was much flexibility in who did various household jobs. As perceived by the mothers, it appears that again in the second year the fathers of sons had a more active role in the household than had

TABLE 3

*Mothers' responses to questions on child-rearing and family practices, second-year, by number and percentage and sex of child**

QUESTION AND RESPONSES	BOYS (28)		GIRLS (28)		TOTAL (56)	
	number	*per cent*	*number*	*per cent*	*number*	*per cent*
39 *Age of toilet training*						
Less than a year	5	17.9	3	10.7	8	14.3
Around a year	6	21.4	7	25.0	13	23.2
Later than a year	17	60.7	18	64.3	35	62.5
42 *Amount of learning of toilet training*						
None—No training	11	39.3	6	21.4	17	30.4
Child doesn't understand	6	21.4	5	17.9	11	19.6
Child has the idea and sometimes indicates	10	35.8	14	50.0	24	42.8
Child nearly trained	1	3.6	3	10.7	4	7.1
44 *Satisfaction of mother with toilet training methods*						
Little	3	18.8	3	13.6	6	10.7
Some	5	31.3	10	45.5	15	26.8
Much	7	43.8	9	40.9	16	28.6
45 *Strictness about naptime*						
Kept in bed to sleep	12	42.8	16	57.1	28	50.0
Some rest if not sleep	10	35.7	10	35.7	20	35.7
Allowed to be up if not sleepy	3	10.7	2	7.1	5	8.9
47 *Strictness about bedtime*						
Expected to remain in bed	17	60.7	17	60.7	34	60.7
Occasionally allowed up	4	14.3	5	17.9	9	16.1
May be up for short periods	6	21.4	6	21.4	12	21.4
49 *Expectations for child's understanding of rules*						
Use many rules, child obeys	6	21.4	6	21.4	12	21.4
Use some rules, child sometimes obeys	10	35.7	16	57.2	26	46.4
Use few or no rules	12	42.8	6	21.4	18	32.1
52 *Flexibility of division of labor in home*						
Assigned, little flexibility	4	14.3	10	35.7	14	25.0
No definite pattern, some flexibility	10	35.7	12	42.8	22	39.3
Chosen, much flexibility	13	46.4	6	21.4	19	33.9

* The total number on each question varies slightly due to questions which did not apply, unanswered questions, and unusable responses.

TABLE 4

Mothers' responses to second year questions concerning most complicated times of day, child's role in and method of handling complicated situations, by number and percentage

QUESTIONS AND RESPONSES	NUMBER	PER CENT
Times most complicated:		
Evening meal, including preparation	26	46.4
Breakfast and early morning	13	23.2
Bedtime	9	16.1
Lunchtime	4	7.1
Mid-morning	2	3.6
No specific time, depends on situations	10	17.9
None	4	7.1
Child's part in complication:		
Child is tired, hungry, upset, irritable	18	35.4
Child wants mother's attention, whines, underfoot, hangs on mother, pesters, wants a story read	16	31.4
Child gets into mischief, throws food, teases sibling, pulls cans from cupboard and silverware from table	11	21.6
Child has little or nothing to do with complication	11	21.6
Methods used by mother to handle situation:		
Gives special attention, as early feeding, or a walk	23	46.9
Another family member cares for child so mother can work without interruption	15	30.6
Organizes time to get things done rapidly, has a pattern	8	16.3
Nothing, little can be done, lets situation exist	4	7.1

the fathers of daughters. To the extent that this activity in the household pertains to the child, the question can again be asked: Are boys' fathers considered more significant figures in the socialization of their sons than they are in relation to their daughters?

During the second interview, the mothers were asked about times in the day which seemed to be most complicated in their families. The responses appear in table 4. These data show that the mothers thought the most complicated times were around mealtimes, particularly the evening meal, and at bedtime. Asked what part the child played in these situations, about one-third of the mothers said the child was tired, hungry, or irritable, and another third that the child wanted special attention or was pestering the mother. The situation was usually handled by the mother giving special attention to the child or another family member doing so. Some mothers said better organization would help, but four said there was nothing to be done.

Indeed, numbers are small, but interesting variations occur when boys' and girls' mothers' responses are compared. In twice as many of the boys' families as the girls,' the most complicated time in the day occurred at breakfast and early morning. But whatever the complicated time, four times as many boys' mothers said the situation was handled by having another family member (usually the father) care for the child; and nearly twice as many girls' mothers said they themselves handled the situation by giving special attention to the child. This variation in handling situations may offer additional evidence concerning the role of the father in rearing sons as compared with rearing daughters.

According to table 5, mothers mentioned many things which they enjoyed in their children, including rather specific traits or behavior and more general characteristics or accomplishments. Between the first and the second year there were increases in the responses in the categories of verbal interaction, nonverbal interpersonal relations, in personality traits, and in achievements; there were decreases in the proportions who responded concerning physical attributes, "everything," and items which contributed to parents' convenience. The responses in the non-verbal interpersonal relations category increased a statistically significant amount from the first to the second year; about 6 out of 10 mothers mentioned the child's responsiveness in this area the first year, compared with 8 out of 10 who mentioned this the second year. The mothers' enjoyment of the child's achievements increased from 20.0 per cent the first year to 53.6 per cent the second year.

Comparing first-year information on what mothers said they enjoyed in sons with what other mothers said they enjoyed in their daughters, the data (not shown) reveal that only one boy's mother said she enjoyed "everything"; six girls' mothers indicated this. More boys' mothers (35.7 per cent) than girls' (25.0 per cent) expressed pleasure with their child's verbal interaction. The second-year data show that more boys' mothers (60.7 per cent) than girls' (46.4 per cent) enjoyed the child's achievements. Also during the second year only half as many mothers of sons as of daughters (N = 8) expressed ideas categorized as the child's contribution to parental convenience. In all cases, numbers are small, and the data have not been subjected to tests of statistical significance.

It may be a middle-class cultural pattern that mothers tend to enjoy their daughters more than mothers do their sons and that mutual identification between mother and daughter and between father and son is stronger than mother-son and father-daughter identification in the first two years of life. Since the fathers in families having sons were said to have somewhat greater responsibility in the home, the opportunity may be greater for fathers and sons to be companionable, and in the other homes the mothers may

TABLE 5

Typical responses of things mothers found most enjoyable about their children during the first and second years, with number and percentage in each category

CATEGORY	YEAR	TYPICAL RESPONSES	NUMBER	PER CENT
Interpersonal relations (non-verbal)	1	Child's responsiveness; more cuddly than brother; imitates; cheerful	33	58.9
	2	Waving at us; hugging us; positive interplay with siblings	45	80.4
Verbal interaction	1	Coos and smiles; now he jabbers; enjoy sitting and talking to him	17	30.4
	2	Talking; says cute things; growing vocabulary; talks in sentences	23	41.1
Personality traits	1	Never fussy; adjusts well; her enjoyment of things	14	25.0
	2	Outgoing; holds no grudges; eagerness toward life; alert	18	32.1
Achievements	1	Ability to play alone; better than brother at same age	11	20.0
	2	Learning so fast; interested in books; ability to solve puzzles	30	53.6
Physical attributes	1	Nice smile; all she does is eat and sleep; girl, as mother wanted	23	41.1
	2	Twinkle in child's eye; climbing with great dexterity; rough-housing	18	32.1
Contributions to parental convenience	1	Easy to guide; didn't know it could be this easy; not a lot of trouble	17	30.4
	2	Child behaves pretty well; lot of company; goes to bed well; co-operative; less active than siblings	12	21.4
Everything	1	Most marvelous baby; enjoy every moment; just enjoy everything	7	12.5
	2	I enjoy all of him; lot I can't think of	3	5.3

develop a somewhat stronger relationship with their daughters. The social-sex training of the children may be influenced by these relationships. The research of Sears, *et al.* (*10*) concerning the antecedents of dependency and aggression appears to offer indirect evidence to this theoretical position. Their findings lend support to the theory that girls are more susceptible to punishment by their mothers than are boys, which depends upon the assumption that girls are more identified with their mothers and boys are more identified with their fathers.

In table 6 are summarized the responses of the mothers to questions about what in their children seemed to annoy them. These responses show marked differences between the first and second years. The first year, 21 of the 56 mothers were classified as having no annoyances, as compared with only 10 in the second year. The first year 35 mothers mentioned some 42 annoyances, while the second year 46 mothers (including 34 of the same ones) mentioned 70 things which were annoying. The most marked increase occurred in personality traits which were bothersome: No responses were so categorized the first year, but the second year 16 mothers mentioned such things as the child's being determined, impatient, belligerent, selfish, and crabby. Considerable increases occurred, also, in responses in categories of parental discomfort and parental inconvenience; as shown in table 5 on enjoyments, there was a corresponding decrease in the contributions the child was said to make to parental convenience. Annoyances decreased in the category of verbal communications, while a like category in pleasures had increased between the first two years.

The data in tables 5 and 6 suggest that the things with which mothers were pleased or annoyed were related to the developmental levels of their children. The mothers' answers implied that as their children matured from about 8 months of age to about 19 months, they were reaching important marks in the socialization process. They were becoming more communicative and responsive and were learning "acceptable" patterns of behavior; at the same time they were becoming more individualistic and somewhat negativistic, apparently with incessant wishes and desires which required continual satisfaction. What mothers appeared to especially enjoy about their children during the first year was their being babies (with accompanying inconveniences), and during the second year their being active, responsive toddlers (with indications of the mothers' ambivalent feelings). In most cases the same person (Hubert) made the interviews each year, and possibly rapport established the first year helped the mothers to express themselves more freely the second. This would help account for the increase the second year in the number of positive and negative responses to these questions.

In comparing first-year information on how mothers said their sons annoyed them with how mothers said their daughters annoyed them, fewer boys' mothers mentioned ideas categorized as verbal interaction. More boys' mothers that year said their sons simply did not "get on my nerves." The second year twice as many boys' mothers as girls' mothers mentioned ideas in both the verbal and non-verbal interaction classifications, as well as in the one on parental discomfort. Only four boys' mothers metioned negative personality traits as compared with 12 girls' mothers.

Additional comparisons to discover whether ordinal position in the family was related to the pleasures and annoyances mothers expressed concerning their children revealed a few variations. The first year, 11 of the 28 boys and 11 of the 28 girls were "only" children, the remainder being the youngest of two or

TABLE 6

Typical responses of things mothers found most annoying about their children during the first and second years, with number and percentage in each category

CATEGORY	YEAR	TYPICAL RESPONSES	NUMBER	PER CENT
Interpersonal relations (non-verbal)	1	Needs a lot of attention; he's a lot more demanding than I think he should be	8	14.3
	2	Hangs on my skirt when I'm tired; pinches; teases brother; gets restless and bored	10	17.9
Verbal interaction	1	I can't stand repeated crying; fusses before going to sleep; crying bothers me	18	32.1
	2	Moans for no reason; cries for things he can't have; I don't know what she wants	12	21.4
Personality traits	1	(None)	—	—
	2	Has a temper; is determined; impatient; belligerent; defiant; selfish; strong-willed; crabby; no sense of fear	16	28.6
Achievements	1	(None)	—	—
	2	Climbing up on things; gags for attention; empties cupboard	3	5.4
Parental inconvenience	1	Gets awake early; poor sleeper; self-demand unnerves me; ruins my schedule	7	12.5
	2	Won't let me feed her; throws things in the commode; doesn't want to be alone	16	28.6
Parental discomfort—child not up to parental expectations	1	Unable to talk; boring; not lying still to be changed; tired of washing diapers	3	5.4
	2	Just won't train; wets for attention; I used to be able to control him; sucks his thumb; disregard of "no, no"	11	20.0
No annoyances	1	Babies don't get on your nerves; he's too little; not yet anyway; none	21	37.5
	2	Less demanding than sister; I'm more relaxed; I work, don't see child as much	10	17.9

more. The second year changes occurred in five cases, four of which were second children to the only-children families. At the first interview twice the proportion of mothers of only children (36.4 per cent) as mothers of two or more (17.6 per cent) mentioned specific personality characteristics as pleasurable. A year later these proportions were about the same, but at that time some 83.3 per cent of mothers of only children compared with 36.4 per cent of mothers of two or more children found particular joy in their children's achievements. With annoyances, the proportions the first year were about the same for both only children and those with siblings. The following year eight mothers of children with older siblings, compared with one mother of an only child, said the children did not annoy them at all. Apparently the added experience of having had an older child makes some difference in how parents view their younger children. Again, however, the numbers are too small for statistical treatment and these findings, too, must be interpreted with caution.

Relationships among Attitudes and Practices

The third area under investigation concerns relationships among attitudes and practices during the first year, during the second year, and between those of the first and those of the second year. The hypothesized relationships were tested statistically by means of Pearson's coefficient of contingency (C). This technique provides an estimate of the degree of correlation between two variables and utilizes chi-square, interpreted appropriately in terms of probability; a correction for small samples is employed (Ccor). The data from these analyses are presented in tables 7, 8, and 9. The numbers in all instances are small and interpretations of these data also should be made with caution. The coefficients which are statistically significant, and then may be said to be reliable and not due to chance distributions, are indicated by the asterisk (*); several are so marked, and most are low.

In table 7 are presented the coefficients of contingency, corrected (Ccor), showing relationships among data about child-rearing attitudes and family practices during the child's first year. A large proportion of the significant coefficients concern relationships in the area of feeding or the mother's feelings about the feeding. Mothers were asked (Q 22a) how they fed their child as an infant and then asked (Q 22b) how they felt about this. The feelings were categorized according to a definite preference for breast feeding or a preference for bottle feeding (free choice or by physical necessity). A tendency (2 x 6 and 3 x 6, Ccor values of 0.38, significant at the 5 or less than 5 per cent level) was shown for mothers of only children to prefer bottle feeding, and they tended to feed according to these preferences (5 x 6, Ccor, 0.82).

The coefficient expressing the relationship between the mother's feelings about early feeding methods and her evaluations of the child's reaction to new foods was 0.43 and statistically significant. Mothers who said they preferred bottle feeding tended to have children whom they felt had avid appetites for new foods, as compared with the reverse tendency for mothers who preferred breast feeding to have children who were apathetic or refused new food. Theoretically, the oral satisfaction the infant derives by breast feeding may retard change to different foods. The coefficient of 0.34 relating the child's reaction to new foods to the mother's feeling about this (8 x 9) showed mothers to be pleased when their children

TABLE 7

Relationships among child-rearing attitudes and family practices during the children's first year, shown by coefficients of contingency, corrected (Ccor)

ITEM	Q	COEFFICIENTS OF CONTINGENCY, CORRECTED												
		1	2	3	4	5	6	7	8	9	10	11	12	13
1. Child's age at interview	6	—												
2. Ordinal position	8	0.29	—											
3. Number of children in family	8	0.29	—	—										
4. Mother's education	12	0.01	0.02	0.33	—									
5. How child fed as infant	22a	0.04	0.17	0.35	0.02	—								
6. Mother's feeling about feeding child	22b	0.25	0.38*	0.38*	0.26	0.82*	—							
7. Age child fed foods other than milk	22c	0.13	0.19	0.31	0.02	0.14	0.13	—						
8. Child's reaction to new foods	22c	0.26	0.10	0.11	0.12	0.32	0.43*	0.07	—					
9. Mother's feeling about child's reaction to new foods	22d	0.08	0.16	0.31	0.02	0.25	0.20	0.28	0.34*	—				
10. Schedule of feeding baby	26	0.03	0.10	0.08	0.32	0.03	0.15	0.19	0.12	0.01	—			
11. Attention given baby when he cries	25	0.24	0.09	0.09	0.32	0.04	0.32	0.21	0.12	0.07	0.33*	—		
12. Husband's responsibility for household jobs	27	0.12	0.27	0.27	0.20	0.24	0.38*	0.31	0.24	0.14	0.10	0.56*	—	
13. Schedule of family routines	28	0.13	0.30	0.25	0.35*	0.07	0.10	0.04	0.03	0.02	0.32*	0.07	0.05	—

* Significant at the 5 or less than 5 per cent level.

were not apathetic. Undoubtedly pediatric advice has a part in this picture.

The mothers were asked about the responsibilities of the fathers in household jobs (Q 27). There was a significant tendency (6 x 12, Ccor, 0.38) in families in which the mother preferred to feed her infant by breast for there to be considerable sharing of jobs and for the bottle-preference families to have more definite separation or division of home responsibilities. Another coefficient related division of household responsibilities (Q 27) to attention given the baby when he cried (Q 25)—the Ccor value of 0.56 was significant at the one per cent level. In families where there was little interchange of jobs the tendency was to pick up the child whenever he cried, rather than to wait until he cried a while. These findings may relate to the traditional or non-traditional conception of the mother-homemaker role these women hold. In the more or less traditional family, the wife's main responsibilities center around her role as mother and homemaker and the husband's around his job as father and provider. In the traditional household the wife may be more immediately gratifying to her baby in her activities of feeding and tending than in the less traditional households, where the other family members take some attention and share in responsibilities.

Other coefficients (11 x 10 and 13 x 10) also concern feeding. In one question mothers were asked about timing of the infant's feeding (Q 26). Mothers who fed on demand tended to pick up the baby whenever he cried, and those who fed on semi-demand or by schedule tended to investigate or wait before they picked up the baby. In terms of scheduling of family routines (Q 28), there was a reliable tendency (10 x 13, Ccor, 0.32) for mothers who had fed their infants on demand not to have any very definite schedule for their household tasks. The mothers who operated their homes by schedule also fed their infants on schedule. The coefficient revealing relationship between family schedule and mothers' education (13 x 4) was 0.35 and statistically significant; women who had had college training or more tended to be those who had a framework for a flexible family schedule, and the less well educated tended toward more definite scheduling. This factor of education appears to be a pervasive element which may influence family patterns and child-rearing practices in many other ways.

In table 8 are shown the coefficients of contingency, corrected, indicating relationships among data about child-rearing attitudes and family practices during the children's second year. As was true with data gathered during the first year, a number of the significant coefficients pertain to feeding. Several are related to the variable of age at the second interview. It is clear from the 3 x 1 comparison (Ccor, 0.68) that the older the child at the interview, the less help he was being given in feeding. The children (3 x 2) who required little help in eating were being fed at the family table rather than separately or only occasionally with the family. (The younger children tended to be fed separately, although this was not a statistically significant coefficient.) While mothers of older children in our second-year group tended to be those who evaluated their children as advanced for their age (Q 29), there was a very slight tendency for

TABLE 8

Relationships among child-rearing attitudes and practices during the children's second year, shown by coefficients of contingency, corrected (Ccor)

ITEM	Q	COEFFICIENTS OF CONTINGENCY, CORRECTED													
		1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. Age of child at interview	—	—													
2. Place of feeding child	32	0.22	—												
3. Amount of help given child in eating	34	0.68*	0.53*	—											
4. Seriousness of mother's concern with child's eating	35	0.16	0.20	0.13	—										
5. Amount of thumbsucking	37	0.08	0.15	0.02	0.09	—									
6. Age begun toilet training	39	0.02	0.02	0.06	0.05	0.24	—								
7. Amount of toilet learning	42	0.40*	0.20	0.27	0.05	0.05	0.58*	—							
8. Satisfaction with toilet training methods	44	0.13	0.19	0.14	0.29	0.24	0.05	0.12	—						
9. Strictness about naptime	45	0.00	0.18	0.12	0.15	0.27	0.13	0.19	0.05	—					
10. Strictness about bedtime	47	0.38*	0.01	0.07	0.19	0.05	0.03	0.03	0.35	0.14	—				
11. Expectations for understanding rules	49	0.18*	0.07	0.27	0.19	0.04	0.16	0.41*	0.09	0.05	0.05	—			
12. Amount of activity restrictions in house	30	0.26	0.05	0.32*	0.24	0.35*	0.07	0.15	0.27	0.43*	0.01	0.04	—		
13. Evaluation of child's development	29	0.34*	0.33*	0.00	0.21	0.14	0.16	0.05	0.23	0.20	0.20	0.19	0.39*	—	
14. Flexibility of division of labor in home	52	0.36*	0.04	0.40*	0.01	0.02	0.01	0.07	0.13	0.04	0.11	0.31*	0.21	0.38*	—

* Significant at the 5 or less than 5 per cent level

these same mothers to feed their children by themselves or only occasionally at the family table. A tendency, too, was shown by the significant coefficient of 0.32 (12 x 3) for mothers who gave their children little help in eating to permit more physical activity in the house in contrast to those who gave their children considerably more help. Stated differently, mothers who restricted physical activity in the house tended to give the child more help—perhaps to restrict the child's activity also in feeding himself.

When responses to a question concerning flexibility of division of labor were cross-tabulated with amount of help given the child in eating (14 x 3), a significant coefficient of 0.40 was the result. Where there was little flexibility of jobs—when the wife had her specific jobs and the husband his, with little interchange—the child was given relatively little help in eating.

Other analyses concerning the flexibility of the division of labor during the second year revealed statistically significant coefficients. The coefficient (14 x 1) of 0.36 revealed that in families with the younger children there was more flexibility of division of labor than in those with older children. Also in those families where much flexibility of jobs existed, the expectation was for the child to understand only a few simple rules (14 x 11, Ccor, 0.31), as contrasted with families with little sharing of jobs who had higher expectations for understanding. When mothers were asked to evaluate their child's development in reference to his age, those mothers who evaluated their children as slow or average tended to come from families in which there was considerable flexibility of division of labor; in families where there was a more rigid division of labor, the tendency was for the mother to think her child advanced. The mothers who evaluated their children as slow or average for their age tended, as mentioned earlier, to have the younger children. When the child is young, the father may feel obliged to perform a wider variety of tasks than he does when his child is older and more independent. When the children grow older, the mothers indicate that they themselves assume more of the home responsibilities.

Significant coefficients were derived when the amount of activity restrictions in the house (Q 30) was analyzed in relation to other variables. In fam-

TABLE 9

Relationships between child-rearing attitudes and family practices the first year and those of the second year, shown by coefficients of contingency, corrected (Ccor)

FIRST-YEAR ITEM (A)	Q	COEFFICIENTS OF CONTINGENCY, CORRECTED												
		SECOND-YEAR ITEM (B)												
		1	2	3	4	5	6	7	8	9	10	11	12	13
		Place of feeding child	Amount of help given in eating	Seriousness of mother's concern with child's feeding	Amount of thumbsucking	Age of toilet training	Amount of toilet learning	Satisfaction with toilet training methods	Strictness about naptime	Strictness about bedtime	Expectations for understanding rules	Amount of activity restrictions in house	Evaluation of child's development	Flexibility of division of labor in home
		32	34	35	37	39	42	44	45	47	49	30	29	52
1. Child's age first year interview	6	0.44*	0.77*	0.06	0.15	0.10	0.44*	0.12	0.19	0.36*	0.32*	0.09	0.07	0.38*
2. Ordinal position	8	0.47*	0.33	0.05	0.02	0.45*	0.49*	0.70*	0.52*	0.32	0.10	0.24	0.18	0.04
3. Number children in family	8	0.37*	0.25	0.14	0.16	0.34	0.17	0.58*	0.43*	0.35	0.06	0.18	0.15	0.07
4. Mother's education	12	0.04	0.28	0.15	0.39*	0.13	0.00	0.01	0.16	0.15	0.16	0.04	0.16	0.06
5. How child fed as infant	22a	0.21	0.13	0.16	0.14	0.03	0.04	0.05	0.36*	0.06	0.06	0.04	0.48*	0.23
6. Mother's feeling about feeding child	22b	0.18	0.01	0.14	0.16	0.09	0.08	0.45*	0.29	0.13	0.09	0.08	0.21	0.05
7. Age child fed foods other than milk	22c	0.23	0.21	0.43*	0.00	0.17	0.21	0.01	0.13	0.07	0.24	0.24	0.05	0.18
8. Child's reaction to new foods	22c	0.19	0.16	0.55*	0.32	0.18	0.15	0.16	0.30	0.38*	0.05	0.01	0.05	0.03
9. Mother's feeling about child's reaction to new foods	22d	0.38*	0.08	0.36*	0.07	0.45*	0.02	0.03	0.07	0.40*	0.09	0.45*	0.31	0.14
10. Schedule of feeding baby	26	0.07	0.02	0.12	0.17	0.02	0.25	0.08	0.12	0.26	0.04	0.01	0.35*	0.04
11. Attention given baby when he cries	25	0.06	0.01	0.07	0.16	0.30	0.15	0.14	0.29	0.27	0.00	0.00	0.14	0.22
12. Husband's responsibility for household jobs	27	0.06	0.16	0.02	0.01	0.15	0.13	0.04	0.01	0.09	0.10	0.04	0.23	0.36*
13. Schedule of family routines	28	0.12	0.08	0.07	0.20	0.06	0.30	0.08	0.14	0.12	0.08	0.52*	0.21	0.31

* Significant at the 5 or less than 5 per cent level

ilies where mothers said they had few restrictions and permitted much activity, they tended to evaluate their children's development as advanced (13 x 12). When mothers said they had more restrictions, they tended to evaluate their child as only average or slow; these mothers were rated, also, as being more strict about requiring their children to nap, rather than to play quietly (12 x 9). The children in families with little activity restriction tended to show less thumbsucking than those in the other families.

As shown by the 11 x 1 cross-tabulation, parents of the older children tended to expect their children to have an understanding of more rules than did parents of those slightly younger. Likewise, age seemed to be related to the strictness of the parents concerning their children's bedtime—whether or not the children were allowed to get up or were required to stay in bed; the parents of older children were more strict than those of younger children. A relationship also existed between the child's age and the mothers' response to the question concerning the amount of learning the child had been able to accomplish in terms of toilet training (1 x 7, Ccor, 0.40). Some of the parents had not begun the toilet training with their children at the time of the second interview; however, there was a tendency for the older children to have been rated by mothers as responding occasionally to toileting activities in contrast to the younger children who responded infrequently or not at all.

Another analysis in this area (7 x 6) indicates that those mothers who began to train their child early (at one year or less) had children who were responding occasionally or most of the time, as contrasted with those whose training had begun later who tended to respond only infrequently. Mothers who expected their children to understand a number of rules tended to have children who were making successful responses to toilet training. The mothers who were more lenient about rules for their children tended to be those whose children were not responding to toilet training (11 x 7).

Although the coefficients are low, at the second interview there appear to be associations among several factors. One tendency toward a constellation, interpreted rather broadly, surrounds the mothers of younger children in our age group. These children tended to be evaluated as slow or average in their development, as contrasted to the older ones whose mothers described them as being advanced. The mothers of the younger children tended to have more activity restrictions, were stricter about naptime, but otherwise expected obedience on only a few simple rules. From the wives' reports, it appears that they had more flexible working relations between husbands and wives. The children exhibited less thumbsucking and had less success in toilet training. These mothers may have been keeping their children dependent upon them for longer periods of time than the older group, who tended to show opposite tendencies.

Table 9 shows relationships between child-rearing attitudes and family practices of the first year with those of the second year, and contains a number of coefficients of contingency significant at the 5 or less than 5 per cent level. A few factors appear especially important: the age of the child, his ordinal position, and the number of children in his family at the time of the first year interview. In fact, these items account for almost one-half of all the significant coefficients in this table. The remainder of the coefficients are more clearly indicative of relationships among attitudes and practices the first and the second years, and of these several are concerned with feeding.

First-year item 1 (A-1), age of child at time of first-year interview, is related to several second-year items. The older children tended to be fed with other children (1 x 1, Ccor, 0.44) and required relatively little help in feeding as compared with the slightly younger children. Other comparisons indicated that the older the child the more learning had occurred with regard to toilet training, the more strict the parents were in keeping the child in bed at night time, and the greater the expectation for the child's understanding of rules.

When the child who was the subject of the interview was the youngest of two or more children more often than expected by chance, he was fed at the table with other family members. Mothers of only children tended to feed their child alone or only occasionally at the table with the family. (The same comparison is revealed when the number of children in the family was considered directly.) Relative to toilet training, mothers of only children tended to have begun toilet training earlier than one year; they claimed the children had learned a little by that time. Mothers of second or third children tended to delay this training and to offer no claim that the child had learned anything in this area. These data suggest that the experience of the first child brought to the mothers a belief that success in toilet training can be achieved only when the child is older; perhaps these mothers of more than one child were also busier and unable or unwilling to devote themselves to this teaching before they knew the child was really ready. They probably were less anxious than mothers of only children. Greater satisfaction was expressed by these mothers with their training methods as compared with that of the mothers of only children (A2 x B7, Ccor, 0.70). Mothers of second or third children appeared (A2 x B8) to be more strict about their child's sleeping at naptime, while more than might be expected mothers of an only child appeared to be contented if he only rested or played quietly during that time.

As shown in table 9, two of the coefficients comparing methods of feeding the child during his first year revealed significant relationships with data during the second year. Comparing the method of feeding with second-year naptime practices (A5 x B8) showed

a slight tendency for mothers who fed by bottle to be somewhat less strict about naptime than mothers who fed by breast. The mothers who fed their babies by breast tended to evaluate their children the second year as advanced; the bottle feeders thought their children were only average or even slow.

Other coefficients concerning feeding were related to mothers' feelings about the child's reaction to new foods (Q 22d). More mothers than expected who were pleased with the child's reaction to new food during the first year were feeding their children at the table rather than separately the second year (A9 x B9, Ccor, 0.40); and these same mothers who were so pleased tended to have children about whose feeding they worried little the second year (A9 x B3, Ccor, 0.36). Similarly this group of mothers tended to start toilet training earlier than those who had many worries over their child's reaction to new foods. They tended also to be lenient with their children at bedtime, allowing them to get up fairly often rather than to stay in bed, as compared with the mothers who were matter-of-fact or bothered about the child's eating the first year. One further significant coefficient of 0.45 was the result of cross-tabulating data concerning the mothers' feeling about the child's reaction to new food and the amount of activity restriction within the household. More than expected, the pleased mothers tended to be more restrictive of their children's activities in the house than those who were not pleased.

Analyses of data concerning other feeding practices revealed further relationships. Mothers who reported a preference for feeding their infants by breast tended to be those who were rated as being quite well satisfied with their toilet training methods the second year (A6 x B7). Those who indicated their children had good appetites for new foods the first year tended to worry little about their child's feeding the second year; the mothers who the first year described their children as apathetic about new foods felt they had more serious feeding problems the second year (A8 x B3, Ccor, 0.55). The mothers of avid children the first year tended to be more strict about keeping their children in bed at bedtime than were the mothers of children described as apathetic (A8 x B9). There seems to be a carry-over of attitudes and ways of viewing situations from one year to the next, and success one year seems to beget expectations of more mature behavior the next year.

The mothers who had fed their children foods other than milk at one month or less tended to have few worries about their children's eating the second year; and more than would be expected by chance, mothers who began feeding solids to their children later had more problems about feeding the second year (A7 x B3, Ccor, 0.43). Mothers who fed their babies on demand tended the second year to rate them as average or slow in their over-all development, as compared with mothers who had fed their children by semi-demand or on schedule, who tended to rate their children as advanced in their over-all development (A10 x B12, Ccor, 0.35).

A slight relationship appears to exist between the mothers' educational level and the amount of thumbsucking in their children. The mothers who had had college training or beyond tended to have children whom they said had little or no thumbsucking, as compared with the mothers who had had less than college training (A4 x B4, Ccor, 0.39).

Some of the coefficients relate to the general family practices. Families where during the first year there was considerable flexibility about the timing of family routines tended to allow more freedom of activities for the children in the household the second year (A13 x B11, Ccor, 0.52). Families in which the mothers reported that their husbands had considerable responsibility for household jobs and activities during the child's first year tended to have a continuing pattern of flexibility of the division of labor between husband and wife the second year (A12 x B13, Ccor, 0.36). These data, together with those presented earlier, suggest a general and pervasive personality and/or family pattern related to the character of the organization of the families. Further research might clarify and formulate this concept and test hypotheses about its relation to important areas of child rearing.

In all the instances described above, the coefficients are low. While discussion is limited to those which are statistically significant, the relationships as stated are tentative. While some attitudes and practices appear to be antecedents of others, it remains for further research to demonstrate these relationships.

Summary

In this study we have traced some attitudes and practices of mothers rearing their children from birth to the age of two years. Interview schedules were designed in relation to existing theories of personality development in order to obtain information describing the attitudes and practices of mothers in rearing their children, to discover factors related to such attitudes, and to determine the relationships among the attitudes and practices. The study population consisted of 56 mothers of 28 boys and 28 girls who had been registered for later enrollment in the nursery school at the Pennsylvania State University. As a group the mothers were more highly educated and of higher socioeconomic status than mothers in the general population. They were interviewed during their child's first year, then again about a year later. Some of the changes which occurred between the two years included arrival of new children, changes in the fathers' jobs, and some families' moving to new homes.

Data are presented which show similarities and differences in attitudes and practices between mothers of girls and mothers of boys. In some areas mothers appeared to be somewhat more attentive to their daughters and enjoyed rearing them more than moth-

ers in this group did their sons. As perceived and reported by the mothers, fathers of sons had more responsibility for household jobs and family routines than did fathers of daughters. The mothers of sons tended to allow more activity than did mothers of daughters; moreover, the mothers of boys tended to be less strict with their boys and to expect less understanding of rules than did mothers of girls. These data, we suggest, point out identification-socialization patterns.

Data in response to questions concerning joys and annoyances with their children revealed interesting differences between sons and daughters in what mothers express, although numbers are too small for statistical treatment. Mothers tended to enjoy their daughters more than mothers did their sons; the interpretation may be warranted that mutual identification between mother and daughter and between father and son is stronger than mother-son and father-daughter identification, at least as seen indirectly by the mothers. These data also suggest that the things which mothers were pleased or annoyed with in their children were related to the developmental levels of the children. The mothers' answers implied that as their children matured from about eight months of age to about 19 months of age, they were reaching important and "typical" marks in the socialization processes. The ordinal position of the child in the family appeared to be related to the kinds of annoyances and the things enjoyed by the mothers in their children.

In the latter part of the study, data are presented showing relationships among child-rearing attitudes and family practices during the first year, during the second year, and between those of the first and those of the second. Pearson's coefficient of contingency, corrected for small samples, was utilized and a number of significant relationships were so revealed. The coefficients are all low and relationships are tentatively expressed.

Age of child at the time of the interview and ordinal position of the child in the family appeared to be especially important factors in our analyses. Future work in this area should take more accurate account of these. A number of the significant coefficients are in the areas of feeding and attitudes of the mother toward the feeding. Other important areas appear, also, in relation to questions concerning the familial milieu in terms of its flexibility of time scheduling and family organization. Future studies might make comparisons of such family patterns as seen by the fathers as well as the mothers, when seeking to discover antecedent attitudes and consequent behavior in the children.

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Omicron Nu Conclave

The Twenty-first Conclave of Omicron Nu will be held at the University of Illinois in Urbana on Thursday, Friday, and Saturday, June 20 to 22, 1957, the week end preceding the annual meeting of the AHEA in St. Louis. Reservations may be made directly with Edna Dick, faculty adviser of the hostess chapter—Epsilon—School of Home Economics, University of Illinois. Catherine Sullivan of that chapter will serve as chairman of local arrangements, which will include a banquet on Friday night and a picnic or other informal meal on Thursday night. All members of Omicron Nu are not only welcome to attend, but urged to do so.

During the AHEA annual meeting a tea is scheduled for Omicron Nu members on Wednesday, June 26, at 4 p.m.

COLLEGE CLUBS

JOAN CASSIDY, *EDITOR*

A Future in Textile Research

Textile-research positions range from construction, performance, and development testing, through research for textile editorials and advertising copy, to laundry-techniques research. Home economists in textile-research positions stress the importance of chemistry, physics, and mathematics. They emphasize curiosity, an open mind, and persistence as necessary to a good researcher. Reward of their positions—knowing they aid both the producer and the consumer of textiles. The profiles on these pages are a sample of the many interesting positions encompassed within the area of textile research. The information was gathered by the committee on apparel, home furnishings, and textiles of the home economics in business section of the AHEA.

A Recent Graduate

Ann Kirk Barrowclough of Prospect Park, Pennsylvania, was graduated from the University of Delaware in June 1956. She now holds a responsible position in the Research and Development Division of the American Viscose Corporation in Marcus Hook, Pennsylvania. She works in the microscopy laboratory. To this laboratory come requests for microscopic analysis of textile fibers being researched in other laboratories in the company. Miss Barrowclough and her co-workers take photomicrographs of these fibers, analyze the results, and prepare reports on their findings. Accuracy and thoroughness are essential, she finds, as well as the capacity to stay enthusiastic about a project until it is finished. She has found that a research worker must have the ability to work closely with others toward a common goal, must be observant, adaptable, and able to learn quickly.

Ann Barrowclough majored in clothing and textiles, earning a BS degree in home economics. Interested in research, she did summer work while in college in the development laboratories of an oil refinery. She also worked in the textiles laboratories in school, thus gaining valuable experience in setting up experiments, in working with detail, in analyzing carefully, and in recording results accurately.

It is interesting to note that there had not previously been a home economist in the position she now fills. She feels that her home economics training with its emphasis on textiles and chemistry was the influential factor in helping her get the job. Her sound science background in general and organic chemistry and biochemistry has been indispensable, and she candidly reports that she wishes she had even more. She advises other home economics students interested in textile research to add to their work in textiles and chemistry, a basic course in physics and one course which concentrates on laboratory techniques, particularly the use of the microscope. A course in photography would be helpful, too.

With this background, a home economics graduate like Ann Barrowclough is well equipped to qualify for apprentice positions in textile research. The opportunities for advancement are many, and depend, as in most fields, on the ability of the individual to learn and to work enthusiastically. Salaries for beginners in research range from $3500 to $4200, varying with the graduate's training and previous work experiences. The tremendous textile industry, with its emphasis on research, offers the home economist many avenues for professional growth.

The personal satisfactions in research work are many for an individual of Miss Barrowclough's background and temperament. She knows that the services performed in the laboratory in which she works are essential and indispensable to the fast-moving, constantly expanding, textile fiber industry. The industry of which she is a part is one of the keystones of our national economy. The products resulting from the creative research of the fiber producers are basic to the advancement of our national standard of living; textile research makes fundamental contributions to industrial technology the world over, and Ann Barrowclough helps.

Laundry Researcher

Joan Goodhue, a 1954 graduate of Iowa State College, is now a home economist with the Procter & Gamble Co. in Cincinnati, Ohio. The responsibilities of her position include the origination, organization, and supervision of test programs designed to assist the consumer with laundry problems. Previously, she had done College Board work and been an assistant buyer in a department store. She feels that her background as head of stock in the fabrics department and her selling experience helped in getting her present position, because she was equipped with a sound knowledge of textiles as well as an understanding of retailer and consumer problems.

Miss Goodhue finds her present work in research extremely stimulating and satisfying. Her efforts contribute toward providing the consumer with more efficient laundry techniques. Her work is valuable to her employer in helping to develop better products and in helping to eliminate consumer problems. She summarizes the way she feels about her job by saying that the fundamental satisfaction comes from having contributed to something that benefits others.

Of the courses Joan Goodhue took in college, those which have been particularly helpful are textiles, textile chemistry, and household equipment. She recommends mathematics courses as extremely desirable additional preparation for research careers. Certain personal characteristics, of course, are also essential for research work. Curiosity, accuracy, dependability, and organizational ability are those which she cites as being particularly important.

In the field of laundry and equipment research, salaries range from about $4,000 to $5,000 per year. Advancement opportunities are many, as the equipment manufacturers and allied industries have discovered the value of home economists. A beginner advances as her ability increases.

Head of a Textile Testing Laboratory

Genevieve Smith is head of the New York Textile Testing Laboratory for Sears, Roebuck and Co. She supervises the testing for textile fabrics and garments in women's and girls' ready-to-wear. Development and interpretation of instructions on washing and care of garments are part of her work. The personal satisfactions she gets from her job, Miss Smith says, are knowing that customers have been helped to get more for their money and feeling that her work contributes to raising standards in the textile industry.

Proper training and experience are essential for the administration and research work Miss Smith does. Her background includes a Bachelor of Science degree in home economics—arts and sciences—from the Illinois Institute of Technology, Chicago, and a Master of Science degree—clothing and textiles—from Kansas State College, Manhattan. Between degrees, Miss Smith taught clothing and textiles in high schools in Illinois and Michigan.

After receiving her master's degree, she was an assistant chemist in a felt manufacturing company for two years. Then she worked on a textile-research project and supervised graduate students in their textile projects at the University of Alabama.

She joined Sears, Roebuck and Co. in Chicago in 1946 as a textile technician in the Textile Testing Laboratory. After three years of proving herself in this capacity, her achievement was recognized. She was transferred to New York to establish a new Sears Textile Testing Laboratory for testing fabrics and garments in women's and girls' clothing. It was a real challenge. It meant complete organization of a new laboratory: planning; buying equipment; and setting up procedures, tests, and reports.

Now, almost ten years later, it must be gratifying to Miss Smith that she has justified the faith the Company had in her. Evidence of growth in the laboratory is shown in the increase of the small beginning two-member staff to the present ten.

Anyone interested in textile testing as a career is advised by Miss Smith to acquire a good college background in chemistry, physics, textile analysis, and journalism. Personal qualifications for a supervisory job she outlines as: be able to use good judgment, be able to be impartial, be easy to work with, be able to take criticism, be able to work under pressure, be adaptable, and be capable. She stresses the importance of good physical stamina and points out the necessity of being able to work on one's own, as well as with others.

Miss Smith's career—the result of concentrated application to various facets of her field—is a real inspiration to those who seek to achieve success in similar work.

College clubs plans for the annual meeting will be in the May issue.

Canadian Representatives Discuss International Congress with AHEA

Marjorie Kennish, president of the Canadian Home Economics Association, and Mary A. Clarke, who has been named the Canadian liaison representative to the American Home Economics Association on plans for the 1958 Ninth International Congress on Home Economics, met with AHEA representatives in Washington, D. C., January 21 and 22.

AHEA President Beulah V. Gillaspie, Catherine T. Dennis, a member of the executive committee of the International Federation of Home Economics, and Mildred Horton, AHEA executive secretary, told the Canadian representatives of their meeting in Paris in September with other members of the Federation's executive committee. The Canadian representatives also discussed Congress plans with Association representatives near Washington, D. C., who have been serving as the USA organizing committee for the Congress to be held on the campus of the University of Maryland, College Park, Maryland, July 28 to August 2, 1958.

During the next few months the two hostess associations will be publicizing the Congress, continuing work on program development and physical arrangements, and preparing a prospectus and application blank for distribution to persons interested in attending the Congress. It is expected that this prospectus will be available in June 1957. Meanwhile, the headquarters office of the Federation in Paris will be requesting working papers for the Congress from member countries.

AHEA Will Vote for National Officers This Month

The official 1957 ballot for the election of AHEA officers will be coming to all members near the end of March. Watch for your ballot, study it carefully, and vote promptly.

A president-elect heads the slate of officers to be elected. Others on the ballot are a vice-president and recording secretary, as well as three members of the committee charged with nominating the candidates for national office. The officers elected will take office at the close of the 1957 annual meeting. The president-elect serves as president-elect for one year, becoming president of the Association at the close of the 1958 annual meeting.

The professional sections choose chairmen-elect and secretaries this year. The subject-matter sections elect vice-chairmen. Members may vote in *one* professional section but in as many subject-matter sections as they wish.

Ballots are to be returned to AHEA by April 26. Election results will be announced at the annual meeting.

M. Marie Mount

M. Marie Mount, treasurer of the American Home Economics Association during 1946-48 and dean of the College of Home Economics at the University of Maryland since 1925, died on January 23. She joined the University staff in 1919 as head of the department of home and institution management. She was a former owner of the Iron Gate Inn in Washington, D. C., and was instrumental in establishing scholarships under which young women could study home economics at the University of Maryland.

Miss Mount had held office in numerous professional, national, and state organizations. A former president of the Maryland Home Economics Association, she also served as secretary of the home economics section of the American Association of Land-Grant Colleges and State Universities and was a member of its executive board for home economics research. She served as chairman of AHEA's apprentice training committee and of the one on furnishings for the AHEA headquarters building.

The College of Home Economics at the University of Maryland is establishing the Marie Mount Memorial Scholarship Fund in recognition of her many years of devoted service to the profession and to the University.

Traineeships for Health Personnel for 1957-58 Available

The Public Health Services announce that applications for 1957-58 public health traineeships for professional health personnel should be submitted by April 1 if possible. Stipends range from $2400 to $4800 plus allowances for dependents. Information and application forms may be obtained from the Chief, Division of General Health Services, USDHEW, Washington 25, D. C.

Abstracts of Doctoral Theses Related to Home Economics, 1955-56

Following are abstracts of doctoral theses in home economics and closely related fields presented, in most cases, during the academic year 1955-56. The selection of abstracts was made mainly from titles of 1955-56 theses in home economics and related fields as compiled by the Home Economics Research program of the Agricultural Research Service, U. S. Department of Agriculture, and the Home Economics Education Branch, Office of Education, U. S. Department of Health, Education, and Welfare. The abstracts were presented chiefly by members of the American Home Economics Association. They represent research in various areas of home economics. With each abstract is the title of the thesis, the name of the author, and the name of the college or university that awarded the degree. Some abstracts are not included here because longer articles are in preparation.

Education

The Concept of the Home Economics Teacher Held by High School Students, MARGARET K. BARKLEY, *University of Illinois.*

The high school home economics teacher is one of the crucial elements in the recruitment of members for the profession. High school students' opinion of the home economics teacher is important to her satisfaction in the teaching profession. The purpose of this investigation was to determine the synthesized concept high school students have of this teacher.

In order to discover how students picture the home economics teacher, a free-response instrument was developed and administered to 393 students from three different high schools. These boys and girls were asked to describe the female teachers of home economics, English, business education, and physical education in five different situations. From these free-response answers, synthesized concepts of each type of teacher were constructed, and these concepts were then tested with other students.

Students from 25 Illinois high schools co-operated in filling out the final instrument, *What Are Women Teachers Really Like?* The investigator personally administered the inventory to a majority of the student volunteers. Key phrases—including sections on appearance, classroom behavior, and personal relations with others—were presented to the students, and in each section they double checked the phrases best describing each type of teacher.

Responses from 796 boys and girls were analyzed to see whether the synthesized concepts held by these students were standardized and could be classified as stereotypes. Separate analyses were made to detect differences in replies between boys and girls, students from large and small schools, and students who had had and those who had not had a home economics teacher for a class.

The investigator found that high school students viewed the home economics teacher as enjoying class- and out-of-class relationships with students, letting students plan some of their own activities, and being a confidante for personal problems. She was pictured as wanting her own methods used in class. Approximately two-thirds of the students believed that she would rather be a homemaker than a teacher. Boys saw her as teaching only cooking and sewing while girls pictured her teaching a broad, well-rounded program of family living. This difference was significant at the five per cent level.

The use of the D statistic, a measure of the dissimilarity between profiles, revealed that the home economics teacher was most similar to the business education teacher in appearance and classroom behavior. She was most similar to the physical education teacher in her personal relations with others.

Boys appeared to give indications that they were constantly less clear than girls in their ideas of the home economics teacher. Students from small schools had slightly clearer concepts about the home economics teacher than did students from large schools. No appreciable differences were noted between students who had had and those who had not had a home economics teacher for a class.

The concepts that different groups of students had were so standardized for each type of teacher that they were classified as stereotypes. This study appeared to have implications for selection of students for the profession, college curriculums, and in-service training.

A Study of the In-Service Education Needs of Homemaking Teachers in Delaware, RUTH MITCHELL LAWS, *New York University.*

A modern educational concept is the recognition of the need for continual attention to the professional improvement of teachers. The underlying purpose of this study was to make a contribution to the in-service education program for the professional improvement of homemaking teachers in Delaware.

Five specific objectives or subproblems were set up to guide the study: (1) to analyze the present status of in-service education of the homemaking teachers, (2) to determine the extent to which these teachers are participating in the present homemaking program, (3) to determine the factors limiting participation in the

present program, (4) to determine the types of courses and services which homemaking teachers consider helpful in meeting their professional needs, and (5) to formulate recommendations based on the data collected for a comprehensive program of in-service education.

Findings on the status of in-service education of homemaking teachers reveal that the chief sources of in-service education are summer courses at the University and the varied services of the State Education Department. Factors limiting participation in in-service work were found to be cost, distance, travel, family responsibility, and lack of time.

The study enabled the investigator to draw a few general conclusions about an in-service education program for homemaking teachers in Delaware. These include:

1. The University has an opportunity to broaden its services in off-campus, in-service work for homemaking teachers.
2. In-service education centers for home economics teachers need to be established in three areas of the state in order to give teachers an opportunity to work on practical problems near the local setting.
3. Sound leadership in in-service education calls for co-operative planning by all those concerned with the Delaware program.
4. A contribution to in-service growth would be made through the development and adoption of sound evaluation instruments.

An Experimental Program of Family Life Education for Elementary Schools, MARIAN MCMILLIAN. *Pennsylvania State University.*

The purpose of this study was to assemble the more widely accepted concepts of family life education and to suggest implementation of these concepts in an integrated program at elementary school level.

The following procedures were used to supply the data: (1) examining research findings and literature to determine principles and characteristics of a family life education program; (2) obtaining from authorities in the field their opinion as to objectives of such a program at elementary level; (3) applying these opinions and principles to an elementary school program—to its philosophy, its organization, the needs of students at elementary level, its methods, its materials, and the background of its staff; (4) working with in-service elementary teachers for a period of one academic year experimenting with family living activities which could be blended with established curricular content; and (5) developing a "pilot program" at elementary level to be evaluated by teachers, parents, and students.

The findings reveal the following data: A family living program at elementary level is co-operatively planned and evaluated by administrators, parents, teachers, and students. Such a program is devised to meet the needs of the students within a particular school. An administrator or co-ordinator is responsible for interpreting the program to teachers, parents, and community groups and for sharing in the development of an integrated program from kindergarten through the sixth grade. The responsibility for teaching such a program is shared among all the teachers and is for all children at all ages. Family life education is not a specialized class at the elementary level, but a blending with established curricula content. A teacher of family living needs to be understanding, resourceful, and willing to work where pioneering is necessary.

The t-test of statistical significance and the chi square technique were used in this study to determine the differences in reaction to the proposed program as evaluated by teachers, parents, and students. A study of the evaluation data indicates that these three evaluating groups believed a family life education program at elementary school level is of value to children, that activities emphasizing family living principles make for more effective learning in all areas of the school curriculum, that all teachers should assume responsibility for teaching these principles, and that the school has a responsibility, along with the home, in helping children become contributing members of the family group. Responses made by the three groups show there was no concern regarding duplication from one grade to the next grade if the age level, the maturity, and the needs of the students were considered.

The Home Economist—Teacher and Homemaker: A Study of Some Factors Relating to Home-Economist Homemakers Going into Teaching Homemaking, NAOMA PENINGER NORTON, *Teachers College, Columbia University.*

The purpose of the study was to identify and describe some of the factors relating to home-economist homemakers going into teaching homemaking after a period of not teaching homemaking. Factors studied were in the areas of positive and negative values to the educational program in the employment of home-economist homemakers; educational preparation for teaching homemaking after a non-teaching period; difficulties, successes, and satisfactions met on the job; and the dual role of homemaker and teacher.

The data for the study were collected during the spring of 1955 through questionnaires completed by 10 state supervisors of homemaking education, 120 home-economist homemakers in their first, second, or third year of teaching homemaking after a period of two or more years of not teaching homemaking, and 96 administrators of schools employing these teachers. The states participating in the study were Arizona, Arkansas, Colorado, Indiana, Nebraska, New Hampshire, New Jersey, Oregon, South Carolina, and Virginia.

Conclusions. On the basis of the summarized responses of the three groups of participants in the study, the following conclusions seem to be indicated:

1. Positive values to the school in employing home-economist homemakers as homemaking teachers seemed to outweigh negative values.
2. Greatest advantages in employing these teachers

seemed to be related to homemaking experience and its carry-over into the classroom; most common disadvantages seemed to be related to limitations in time devoted to the teaching job, in use of up-to-date teaching procedures and developments in home economics, and in participation in professional and other activities related to teaching.

3. Home-economist homemakers seemed to be helped most in going back to school to prepare to enter teaching when adequate guidance was provided, when course work was planned to meet needs, when offerings were organized into short refresher courses and workshops, when classes were composed of mature adults, and when informal methods of teaching were used.
4. Home-economist homemakers were helped most in reorientation to teaching by state supervisory staffs, other homemaking teachers, and school administrators through such means as conferences, workshops, study groups, supervisory visits, and inter-school visitation.
5. These teachers seemed to need the most help with curriculum, methods and materials of instruction, new developments in home economics, and the psychology and guidance of teen-agers.
6. Financial reasons and the teacher shortage were predominant among reasons leading home-economist homemakers into teaching; however, these were often coupled with other reasons, principally relating to the need of the homemaker for interests and creative outlets in addition to homemaking.
7. Family co-operation and approval and adjustments in the pattern of family responsibilities and activities seemed to be essential to the successful combination of the role of homemaker and teacher.
8. The greater family co-operation, self-reliance, mutual respect and appreciation, and the homemaker herself becoming a more vital, interesting person, seemed to outweigh any adverse effects on family living growing out of the employment of the homemaker.

Decision-making in Relation to Management in Classes of Home Economics by Beginning Teachers. BEATRICE PAOLUCCI, *Michigan State University.* [Miss Paolucci held the AHEA's Effie I. Raitt fellowship for 1954-55.]

This investigation was undertaken to study decision-making relative to management in classes of home economics by beginning teachers. A selected group of beginning teachers recorded the decisions they made in classroom management during an intermittent, specified two-week period. A focused interview was conducted with each teacher in order to probe more deeply into the decisions recorded.

The findings indicated that beginning teachers tended to vary in the number of decisions they made, but they tended to be alike in the kinds of decisions made. The length of time required for closure in decision-making seemed related to the kind of decision being made and was determined by personal and situational factors. Ease in decision-making seemed related to amount of knowledge, skill, or information available; relative certainty of consequences; limitation of possible alternatives; and past experience in a similar decision-making situation. Autonomy in decision-making was dependent upon the persons with whom it was possible for the teacher to share decision-making, the importance of the outcome of the decision, and sources of help available. The expectations of the managerial role of the home economics teacher held by beginning teachers seemed related to decision-making. Recognition, approval, achievement, conformity, efficiency, and success were identified as factors that contributed to satisfaction in decision-making, while disapproval, inefficiency, inequality, lack of achievement, lack of success, and uncertainty contributed to dissatisfaction. Data indicated that, in general, beginning teachers seemed satisfied with their decision-making relative to management in their classes of home economics.

Home Economics: Trends and Developments, 1909-1952. LOUISE WATSON PORCH, *Stanford University.*

The study was designed to identify (1) the trends and developments in home economics and the accompanying program of teacher education and (2) parallel social change affecting the American home and family life, 1909-1952. The resultant relational concept was used as a basis for determining whether the teacher education programs prepare students to become teachers of an evolving program of home economics which will meet the needs of individuals and families in our dynamic culture.

The philosophies and purposes of home economics, indicative of trends and developments, were traced through the JOURNAL OF HOME ECONOMICS. The study of social change affecting homes and families was selective and limited to include (1) general socioeconomic conditions affecting family life, (2) changing functions of the family in terms of Ogburn's definition of the functions of the traditional institutional family, and (3) social thought of the times influencing change with emphasis upon those concepts which appeared to direct educational policies.

Certain inadequacies of the home economics program (1909-1952), when viewed against the social background of the times, were apparently associated with incomprehension of the needs of homes and families, although recognition of needs did not always result in effective program development. There was evidence of improvement in home economics education and of resistance to change. The latter appeared to have been fostered by narrow specialization in subject-matter areas and failure to realize that home economics is a professional field existing in response to the changing needs of the American family.

Recommendations developing from the study included: (1) that home economics be conceived of as

a professional field, existing in response to social needs and not to be considered apart from educational, social, economic, and philosophical aspects of the times, and (2) that programs maintain professional effectiveness by continuous evaluation in terms of social change.

The Role of the Home Economics Unit in Ohio Colleges in Education for Family Living. EDNA GERALDINE RAMSEYER, *Ohio State University.*

There has been a growing awareness in higher education that men and women alike desire and should have a more thorough understanding of self and the bases of successful family relationships. Home economists have been aware of this trend and have been seeking to clarify the role of the home economics unit in education for family life.

A partial answer to this question was sought in this exploratory study in which two hypotheses were tested. These were (1) that college faculty and seniors recognize the importance of education for family living for college students and believe that the home economics unit has certain unique contributions to make and (2) that an analysis of the problems seen and proposals made concerning education for family living on their campus would serve as bases for recommendations for strengthening college programs.

Selected goals and learning experiences were developed from educational literature and reported research. These served as the bases for the questionnaire and interview used in collecting data for the study.

A sampling of 16 of the 31 colleges and universities in Ohio with a home economics program, selected according to location and type, were visited during the academic year 1952-53. The 144 faculty interviewed include the administration, home economics, and non-home-economics faculty. The 166 seniors queried represent both sexes, as well as majors in home economics and other fields.

Ninety-six per cent of the faculty believed the selected goals for education for family living important for the college student to attain. More than 90 per cent of each, the faculty and senior groups, proposed requiring or making available to all students selected learning experiences related to education for family living. Approximately 50 per cent of the learnings had been experienced by each student. Those learnings considered most important to require were related to understanding present-day family life and its influence on the individual and factors in the creation and maintenance of a satisfying home.

Many disciplines were suggested as contributing to education for family living, but those mentioned most frequently were social science and home economics.

Many of the problems recognized in the promotion of education for family living were believed solvable if this education were more adequately interpreted to the administration, faculty, students, and society in general. Sixty per cent of the faculty suggested that education for family living should be either an integral part of general education or incorporated in a variety of courses. Home economists were encouraged to initiate and work with interdisciplinary groups in the planning and promotion of education for family living. It was further believed that such an educational program would have to be supported by the preparation of adequately prepared teachers by our graduate schools.

Distinctive Personal Problems of Home Economics Students at the University of Illinois, ELIZABETH JANE SIMPSON, *University of Illinois.*

The purposes of this study were to ascertain the distinctive personal problems of home economics students at the University of Illinois, to determine whether there were significant differences in problems among the home economics students in the four classes and between married and single home economics students, and to explore the possibilities that problems of home economics students differed according to (1) place of residence, (2) religious preference, and (3) occupational status of parents. The major hypothesis was that students of home economics at the University of Illinois have personal problems that are different from those of women students in other curricular areas.

The Mooney Problem Check List, College Form, and an original supplement, prepared by the investigator, were used in collecting data concerning the personal problems of 600 women students at the University. Of this number, 60 were in the arts curriculum, 50 in commerce, 109 in education, 190 in home economics, 47 in journalism, 70 in liberal arts and sciences, and 74 in physical education.

The chi-square technique was used in order to test for differences among groups in the marking of individual items. Analysis of variance was used in order to determine whether there were significant differences among weighted problem counts for the 11 problem areas of the Mooney Problem Check List. Where significant F's were found, the t test was used in order to discover where the differences were located.

Comparisons were made between home economics students and students in other curricular areas in the marking of the check list. Students in home economics expressed greater concern with problems in the area of adjustment to college work than did the students in at least two other areas. The problems of the home economics students centered around study skills and verbal abilities. In general, the home economics students expressed less concern in the areas of personal-psychological relations; the future, vocational and educational; morals and religion; finances; living conditions and employment; and home and family.

Problems in the supplement most frequently marked by the home economics students were those concerned with adjustment to college work and time management. Chemistry and rhetoric were the subject-matter courses considered most difficult.

Sophomores expressed more concern than did juniors

and seniors in the problem areas of health and physical development, finances, living conditions and employment, personal-psychological relations, courtship, sex, and marriage, and adjustment to college work. Freshmen expressed more concern than seniors only in the area of adjustment to college work.

Married home economics students marked fewer problems than did single students and indicated less concern about some of the items concerned with time management. Rural students indicated that they were more concerned about some of the problems of adjusting to college life than were the urban students. There were some evidences that Roman Catholic students were somewhat more problem-conscious than Jewish and Protestant students, particularly in the area of home and family. Also, there were some evidences that the home economics students whose parents were laborers had more problems in the area of finances, living conditions, and employment than had the daughters of parents in other occupational categories.

A next step in research might be to ascertain whether the home economics students at the University of Illinois really do have as many problems as they apparently think they have in the area of adjustment to college work. If the problem is as severe as it appears to be, improvements in curriculum and guidance might be made in order to help alleviate the difficulties.

Administrators' Stereotype of the High School Home Economics Teacher, EMMA MAY BRITTIN WHITEFORD, *University of Illinois.*

Two important problems in home economics are concerned with the attraction of capable students into the profession and the achievement of such satisfying adjustment as will encourage teachers to remain in the field. In view of the fact that the principal in the high school is the status and educational leader, the concept he holds of the typical teacher in subject matter areas might be expected to affect the guidance he provides both to teachers and pupils. Therefore, this investigation is based upon the assumption that administrators' ideas about characteristics of high school teachers might contribute to the understanding of these two problems in home economics.

To distinguish the general concept of the home economics teacher from that of the "typical teacher," administrators were asked to describe typical female teachers not only of home economics but also of business education, English, physical education, and social studies. Through the use of a *Teachers' Characteristics Inventory*, each of a random sample of high school administrators in Illinois was asked to describe the home economics teacher and two of the four other types of typical teachers. Although the responses were received from individual administrators, the findings were treated with appropriate statistical procedures in terms of pooled data.

Responses from 272 administrators were analyzed in terms of content, distinctiveness, and clarity of the descriptive characteristics reported.

Content of stereotypes consists of characteristics describing teachers upon which there is substantial agreement among respondents. Within the limitations imposed by the 90 selected traits from which administrators could choose, the contents of the stereotypes consisted of a pool of 38 traits which were statistically significant and described one or more of the typical teachers. In comparing the composite description of typical home economics teachers with those of the other four types of teachers, principals characterized the home economics teacher as: motherly, artistic, feminine, and creative. Typical teachers of business and of home economics were described as orderly, appropriately dressed, and courteous, while typical teachers of physical education and of home economics were described as friendly and wholesome. All five types of typical teachers were characterized as enthusiastic, poised, capable, conscientious, and resourceful. Traits which might describe teachers in general were designated as co-operative and industrious.

In this study distinctiveness is defined as the extent to which terms describing one teacher differ from those describing another teacher. Statistical treatment of the data indicated that the stereotypes of the typical teachers of business education and home economics were most similar. At the other end of the continuum, least similar were the stereotypes of the physical education and English teachers.

The implications of this study suggest that, inasmuch as the principal in the high school is both the status and the educational leader, the stereotype he holds of the typical teacher in the selected subject matter areas might be expected to affect the guidance he provides to both pupils and teachers. For example, the perception on the part of the pupil of the principal's stereotype of the home economics teacher may be expected to influence her decision at to whether or not she studies home economics in high school and/or college. At the same time, the teacher's perception of the administrator's stereotype of the home economics teacher may be expected to affect, consciously or unconsciously, her concept of herself and her adjustment to her profession.

Family Economics—Home Management

Practices and Attitudes of Homemakers in Cleaning the Living Room, IRENE ROBERTS, *Cornell University.*

Principal objectives of the study were to describe the most recent general cleaning of the living room and to examine certain variables thought to be related to the amount of cleaning performed. An interview schedule obtained from 127 homemakers provided the data.

Time spent in cleaning, number and kind of cleaning operations, trips made from the living room, and

furnishings handled were measures of the amount of work homemakers performed in cleaning the living room.

Few homemakers used help, but those who did performed less work. Homemakers in the upper socioeconomic group rather than in the lower used help although only two hired help.

On the average, homemakers spent one hour a week in cleaning the living room, performed five cleaning operations, and made eight trips from the room. Most of these trips were to remove an item or to get supplies and equipment but in more than one-third of them homemakers either went out or returned empty-handed. Two-thirds of the furnishings were handled. In all households the floor and furnishings received some type of cleaning from the homemaker or her helper. Walls received no attention in almost one-half of the households. On the whole, the greater the amount of furnishings, the greater the amount of work performed.

Families without a full-sized rug and with a heating stove in the living room did not use a vacuum cleaner extensively but used supplies and water for cleaning.

About one-fourth of the homemakers had a favorable attitude toward cleaning, and almost one-third an unfavorable one. The former consistently performed more work than the latter.

Family Relations and Child Development

One Year's Growth of Eleven to Fourteen Year Old Boys and Girls as Measured on Three Related Developmental Tasks, HELEN TATE MCMULLEN BAYER, *Cornell University.*

The purpose of this thesis was to explore the operational meanings of a year's growth (change) as it is recorded by one instrument and to investigate how that change is related to the variables of sex, age, and physiological maturation.

The instrument employed was the Dales Problem Check List, a research tool developed to yield a scaled measurement of students' statuses in relation to 16 (boys') or 17 (girls') subtasks representing the late childhood and early adolescent levels of three developmental life tasks most frequently listed as concerns by boys and girls of 11 to 14 years of age (concerns related to affection, to social groups, and to sex role identification).

One hundred and sixty-one students were retested at two-week intervals; 13 students were interviewed; 409 students were retested at one-year intervals. There was analysis, then, of the Guttman scale patterns resultant from these data; analysis of patterns of changing involvement in late childhood and early adolescent subtasks; and analysis of the statistical significance of changes in both longitudinal and cross-sectional response according to sex, age, and physiological maturation.

The findings indicated that:

There is difficulty in separating unreliability of the instrument from growth of those tested by such an instrument. The stability of response differs according to subtask content, concerns related to parental authority seeming somewhat more stable than those related to personal autonomy. The 33 Guttman scales remain, in general, measures of undimensional attitudes.

Late childhood subtasks follow the anticipated pattern of decreased involvement with increasing age; early adolescent subtasks do not follow the anticipated pattern of increased involvement with increasing age. However, the ratio of late childhood statements to early adolescent statements, mentioned as concerns, does yield patterns of simultaneously decreased involvement in late childhood concerns and increased involvement in early adolescent concerns with increasing age.

This instrument does measure significant changes in students' responses over the period of one calendar year. These changes vary significantly among sex and age groups, and there is significant variation also among physiological maturity groups for girls.

Proposals for Developing Intergroup Understanding through Home and Family Life Education, RUTH BRYANT JEFFERSON, *Teachers College, Columbia University.*

This study presents more than 100 learning experiences which may be incorporated in home and family life education to help Negro and white boys and girls learn to work and play together with good will and mutual co-operation. The specific goals of the learning experiences are to help young people develop so that they will not have prejudice-supporting personality tendencies, to reduce some of the traditional supports of discrimination and segregation, and to strengthen belief in democratic ideals.

Basic to the development of the learning experiences were consideration of (1) the needs of young people as revealed in recent research into the personalities of Negro and white children, (2) the literature dealing with intergroup relationships and ways of modifying intergroup attitudes, and (3) the current status of educational programs for developing intergroup understanding as indicated through interviews with home and family life teachers in recently desegregated school systems and through other surveys.

Three areas, personality improvement, child development, and family relationships, were selected for emphasis of specific intergroup experiences because these areas deal with deep feelings and emotions and therefore they are fruitful for influencing and modifying attitudes. In a fourth area, homemaking practices, learning experiences were suggested to provide a variety of opportunities for young people and their families to get to know fully members of a different racial group while sharing in meaningful activities associated with meeting the physical needs of individuals and families.

All of the suggested activities emphasize personal

involvement. They are intended to make a vivid impact on the students' immediate behavior and to include some significant points of difference from their own experience.

The unique contribution of home and family life education to the development of intergroup understanding is embodied in activities to help correct some of the family and societal conditioning which have influenced the formation of unhealthy and authoritarian personalities and to emphasize in a variety of learning experiences child-rearing practices and family and social relationships which can prevent further unfavorable conditioning.

The approach recommended for help in developing intergroup understanding is focused largely on face-to-face contacts of Negro and white individuals and groups, with equal status participation in activities which are purposeful to them. The effectiveness of this technique is well documented in the study. The appendices and bibliography are a prolific source of reading and other teaching-learning materials for help in developing democratic attitudes, from pre-school through adult levels.

Primarily, this study is recommended for home and family life teachers in recently desegregated school systems. However, other teachers who are concerned with trying new ways to promote good human relationships in school and community life will find this study a rich source of concrete suggestions.

Family Relations and Social Adjustment Scores on the Minnesota Personality Scale as Related to Home and School Backgrounds of a Selected Group of Freshman Women, BERNADINE JOHNSON, *Florida State University.*

The purpose of the study was to explore the relation of scores of college students on the family relations and social adjustment sections of the Minnesota Personality Scale to certain factors of family background, high school experience, and performance during the first year in college. Satisfactory scores were considered to be those from 15 to 85, unsatisfactory scores from 01 to 10 and 90 to 99.

Statistically significant differences were found between proportions of subjects with satisfactory and unsatisfactory scores on the family relations section in relation to (1) church membership (more subjects with satisfactory scores were members of a church), (2) marital status of parents (more with unsatisfactory scores came from unbroken homes), (3) occupation of parents (more with unsatisfactory scores had fathers in professional and managerial occupations), (4) education of parents (more subjects with satisfactory scores had mothers who had not attended college), (5) size of high school (more with unsatisfactory scores had attended high schools with an average daily attendance above 2,000), (6) average high school grade (more with satisfactory scores had an average of A), and (7) grade-point average for the first year in college (more subjects with satisfactory scores had averages of B and above).

Statistically significant differences were found between proportions of subjects with satisfactory and unsatisfactory social adjustment scores in relation to (1) occupation of parents (more with unsatisfactory scores had fathers in professional and managerial occupations), (2) size of high school (more subjects with satisfactory scores had attended either a very large or a small high school), (3) average high school grade (more with satisfactory scores had averages of B and above), (4) extracurricular activities in high school (more subjects with satisfactory scores had participated in five or six activities while more of those with unsatisfactory scores had participated in more or fewer), and (5) time spent in college (more with unsatisfactory scores remained in college less than two semesters).

Institutional Housing as a Factor in the Behavior of Older People, MARY KESLER, *Cornell University.*

Purpose of the study was to determine how the lives of older people change as a result of moving into institutional housing. Data were obtained by interviewing 104 residents in three different sizes of nonprofit, Protestant homes in Minnesota. A study of residents' demographic characteristics showed (1) two-thirds of the population were 80 to 97 years of age; (2) the groups were equally divided between those whose educational level of attainment was the eighth grade or less, high school, or college; and (3) a sex ratio of one man to seven women.

Major conclusions drawn from the analyzed data revealed that after entering the home (1) two-thirds of the men and one-half of the women classified their health as good, minimizing illness or affliction; (2) health was closely related to residents' activities, personal adjustment, and attitude toward the home; (3) one-half of residents got dressed earlier for the day and were more conscious of their appearance; (4) 70 per cent had more "spare time"; (5) more than half indicated they were much happier or just as happy as before entering the home; (6) reading declined, active participation as measured by Chapin's participation scale decreased, while the playing of games in the larger homes increased; and (7) the sociometric study indicated the importance of room location and structural design to social interaction in the homes.

In general, it was concluded that large homes offered many more advantages than small ones through (1) a greater variety of activities and (2) a wider range for selection of friends.

Some Empirical Relationships of a Preschool Sociometric Technique, HELEN R. MARSHALL, *Child Welfare Research Station, State University of Iowa.*

This is a study of relationships existing between 49 preschool children's choices of friends' photographs, their observed social acceptance and degree of social

participation in free play, and teacher judgments of best friends, described in three reports, in *Child Development* (in press).

Patterns of Family Interaction within the Home, ALICE CUTLER THORPE, *Michigan State University.*

The purpose of the study was to investigate the opportunities available for family interaction, for the socialization of children, for the formation of children's images of parental roles, and for the building of emotional ties which may promote family solidarity, as presented through the medium of activities shared by family members in the home.

The data consist of records kept by 50 farm and 50 town families in southern Michigan from time of rising to retiring on a Saturday, a Sunday, and a weekday. Findings showed that in both farm and town homes the whole family spent little time together in shared activities. The principal shared activity was eating. Fathers spent little time in activities shared with their children. Those shared were usually recreational in nature. Mothers spent more time with children than did fathers. Time mothers spent with daughters was usually in routine household tasks. Children spent very little time with each other. Activities shared were usually recreational in nature.

Although farm and town family members were similar in amounts of time they spent in various shared activities, a few significant differences were found. Farm families as a whole spent more time together than did town families. Town husbands and wives spent more time together in leisure activities, but farm couples spent more time together at meals. Farm mothers spent more time with their daughters in meal preparation and meal clearing as well as in other routine household tasks than did town mothers. Town mothers spent more time in the house with their sons than did farm mothers. Television significantly increased the amount of time spent in leisure in those homes with sets.

The study indicates that there are limited opportunities in the home for family interaction through the medium of shared activities.

Food and Nutrition

The Decomposition of Lard and Other Fats in Deep Fat Frying, MARIAN BENNION, *University of Wisconsin.*

(See JOURNAL, March 1956, p. 184.)

Studies on the Microbiological Determination of Amino Acids and on the Methionine and Lysine Requirements of Women, EVELYN M. JONES, *University of Wisconsin.*

The methionine and lysine requirements of women 19 to 26 years old were studied with nitrogen balance as the criterion of adequacy. A semi-synthetic diet, adequate in all other known nutrients, supplied about 0.5 grams of cystine and 10 to 11 g of nitrogen per day. The simultaneous daily administration of 285 milligrams of methionine and 402 mg of lysine was adequate for 5 out of 6 subjects, whereas the remaining subject attained nitrogen balance on the 285 mg of methionine and 502 mg of lysine per day. DL-valine was a satisfactory source of L-valine when the racemic mixture was substituted at twice the usual concentration of the L-acid. When 3 subjects were on a regimen which supplied an estimated 10 mg of cystine per day in the natural foods, a daily methionine intake of 285 mg permitted nitrogen balance in all subjects.

The general method for microbiological assay of amino acids was presented in full. Modifications were introduced to permit the satisfactory assay of methionine and lysine in food mixtures which were low in protein and high in carbohydrate.

The growth responses of *Leuconostoc mesenteroides* P-60 and *Leuconostoc citrovorum* ATCC 8081 were studied in the presence and in the absence of antibiotics on complete media and on media deficient in one or more vitamins.

The Effects of Various Dietary Carbohydrates on the Utilization of Certain B Vitamins in Rats and Human Subjects, DOROTHY REED JUTTON, *University of Wisconsin.*

An increased intestinal synthesis of certain B vitamins has been postulated to explain the superior growth observed in rats fed a vitamin-deficient ration in which the carbohydrate source was the less soluble form, dextrin or cornstarch, rather than sucrose. It is recognized that biotin especially can be synthesized in substantial amounts by the intestinal microflora. The present experiments were undertaken to investigate the effects of dietary carbohydrates on the course of biotin depletion in rats fed a raw egg white ration inasmuch as the graded development of specific deficiency symptoms offers a sensitive test for the amount of vitamin being absorbed and utilized by the animal. In addition, some observations were made on the metabolism of biotin, riboflavin, and thiamine in human subjects on a constant low-fiber diet with and without the addition of a malt extract preparation.

In the animal experiments, weanling albino rats were fed a purified ration containing 20 per cent raw egg white, 70 per cent carbohydrate, 4 per cent salts IV, 5 per cent corn oil, and all the vitamins known to be required except biotin. Sucrose, commercial cornstarch, and cooked cornstarch were each used as the source of carbohydrate in the rations tested. The cooked cornstarch was prepared by heating commercial cornstarch with dilute citric acid.

For the thiamine, riboflavin, and biotin studies in human subjects, nine healthy young men were given a nutritionally adequate low-fiber diet for four weeks. A 28 or 56 gram dose of the maltose-dextrin product was given during the second and third weeks. Collections

of urine and feces were made during the last 2 or 3 days of each week. The excreta and food aliquots were assayed for thiamine and riboflavin by standard fluorometric methods, and biotin was determined by microbiological assay.

In most instances, the balance data in both the human studies and the animal experiments indicated the occurrence of biotin synthesis. In four separate trials, protection from biotin depletion was observed in rats fed a raw egg white ration containing cooked cornstarch as evidenced by better growth, higher biotin content in the livers, and less severe signs of depletion than was found in the control groups fed a sucrose ration. There was no conclusive evidence of increased biotin synthesis in the superior group, since the average daily elimination of biotin in the feces was essentially the same in both groups. Results with a raw cornstarch ration were superior to sucrose but were not so good as those of the cooked cornstarch ration. There were indications that the form of carbohydrate might have influenced the development of biotin depletion by one or more of the following ways: by affecting the absorption of biotin, the formation of the avidin-biotin complex in the intestinal tract, and the stability of the complex from the ingested raw egg white.

In human subjects, the malt soup preparation had some laxative effects but did not appear to influence the metabolism of riboflavin, thiamine, or biotin. The average daily urinary excretion of riboflavin and thiamine correlated to some extent with the urine volumes. The urinary riboflavin excretion represented 11 to 15 per cent of the intake. The total thiamine elimination in the urine and feces varied from 19 to 45 per cent of the intake while the total biotin elimination ranged from 107 to 165 per cent of the intake.

It was concluded that the form of dietary carbohydrate had a definite effect on the development of biotin depletion in rats fed a raw egg white ration. The addition of malt soup to the diet during short test periods did not have any measurable effect on the metabolism of riboflavin, thiamine, and biotin in human subjects.

Need for Pantothenic Acid and Its Relation to Ascorbic Acid in the Nutrition of the Guinea Pig, CECELIA PUDELKEWICZ, *Iowa State College.*

Two objectives were proposed for this study: (1) to produce a pantothenic acid deficiency in the guinea pig by feeding an antimetabolite, *omega*–methylpantothenic acid, along with a natural ration and by omitting the vitamin from the diet and (2) to determine whether an interrelationship between pantothenic acid and ascorbic acid existed in this species.

Nine weanling male guinea pigs were fed a complete natural ration along with *omega*–methylpantothenic acid at the 0.15 per cent level of intake for 15 days; then the level of analogue was increased to 0.30 per cent for the next 18 days, followed by 0.40 per cent for the remaining 14 days of the study. As the level of analogue was increased, the difference in food intake, weight gain, and food efficiency between the experimental animals and their litter-mate controls increased also.

When the experiment was terminated, after 47 days, the experimental animals were anemic, had serum ascorbic acid levels averaging one-half that of the controls, and had an accumulation of pyruvic acid in the blood. Soft woolly fur, pallor, lassitude, salivation, watering of the eyes, muscular weakness of the hind legs, convulsions, and coma occurred also. Upon autopsy, fatty livers and kidneys, hemorrhagic adrenals, and splenomegaly were observed. A chronic pantothenic acid deficiency is believed to have been produced.

In a set of three studies, young male guinea pigs were fed a complete semi-synthetic ration along with four levels of ascorbic acid (0, 2, 10, and 40 milligrams per day) and four levels of calcium pantothenate (0, 0.06, 0.2, and either 8 or 1 mg per day).

Two of the two- to four-day-old animals receiving no dietary calcium pantothenate developed an acute pantothenic acid deficiency. Soft woolly fur, lassitude, diarrhea, convulsions, and hemorrhagic adrenals were noted. Anemia and a decrease in blood plasma ascorbic acid level were not found and blood pyruvic acid levels showed no correlation with concentration of pantothenic acid in the blood. No clear-cut interrelationships between pantothenic acid and ascorbic acid were observed.

Managerial Aspects of Freezer Use with Emphasis on Cooked and Prepared Foods, PHYLLIS ROBERTA SNOW, *Cornell University.*

This was an investigation of the management aspects of meal preparation when a home freezer is available and frozen prepared and cooked foods are used in regular family meals. Representative menus and recipes were prepared by two methods: (1) "bonus cooking" where time for meal preparation was extended and some of the recipes were doubled or quadrupled; and (2) "option cooking," where a block of time was used and multiples of several different items were made. The extra products were frozen and used in meals served four to six weeks later. Comparisons were made of the trips made between appliances; clutter at the time of serving; clean-up required; additional equipment, work, and storage space needed; time involved; acceptability of the finished products; and financial costs.

The use of frozen prepared and cooked foods allowed for greater flexibility in choice of time in which to work and to market, and thus created the possibility of lessening the peak loads which generally accompany meal time.

Savings in preparation time were minor. Compared to the time used for a meal prepared alone, doubling and quadrupling recipes increased the time needed by

one-fifth to one-half. One-third to one-half less of the worker's time was required for the meals in which frozen foods were used.

No change in appliance relationships was needed; but a large counter for mixing, panning, and packaging, and a cart to transport products and to provide counter space at the freezer were recommended. Freezer supplies were most convenient when in the kitchen and readily accessible to the large work counter.

Some substituting of larger equipment, particularly of mixing bowls, was necessary when quadrupling recipes, though few extra pieces were needed. Each major center needed to be completely equipped. Regular home baking dishes were preferred for freezer storage because they required little handling and replacement and no extra storage space.

Clutter and confusion could be avoided with either bonus or option cooking but were difficult to control when quadrupling recipes.

Savings in money were only effected when the food was obtained at unusually low prices, for it was necessary to add the cost of containers, storage, and freezing to that of the food.

Freezing did not improve any product, but all products were appetizing and acceptable. Losses in quality were chiefly associated with the starchy components—rice, noodles, mashed potatoes, biscuits, and pie crust—which absorbed moisture from the sauces or fillings in association with them and became pasty. Methods were suggested for improvement.

In general, quadrupling might be reserved for option cooking and for those items which are served frequently, are expected to taste the same each time, and require little of the homemaker's attention. Doubling would be preferred for bonus cooking and for those items with pronounced flavors where frequent repetition would be undesirable.

Studies of Certain Factors Affecting Methionine Requirement, DOROTHY STEEL, *University of Wisconsin.*

The methionine requirement of women 23 to 32 years old was studied with nitrogen balance as the criterion of adequacy. Methionine levels of 0.26 grams and 0.47 g in the presence of 0.29 g to 0.47 g of cystine were adequate for 9 of 10 subjects, given a semi-synthetic diet in which wheat flour furnished part of the essential amino acids.

In a subsequent study with a nearly synthetic diet, a daily intake of 0.29 g of methionine and 0.26 g of cystine permitted the establishment of nitrogen equilibrium in young women 19 to 26 years old. Levels of 0.29 g of methionine and 0.01 g of cystine were inadequate for the maintenance of nitrogen equilibrium for 3 of 5 subjects. With the addition of 0.125 g of cystine, nitrogen balance was restored in 2 of these subjects. When 2 subjects were given 0.19 g of methionine and 0.089 g of cystine, nitrogen equilibrium was maintained in only 1 subject. In both studies an increase in caloric intake was necessary for the maintenance of body weight when the subjects were changed from the natural foods of the normal diet to the highly purified experimental diet.

Measurements were also made of the amounts of methionine required by the adult male rat for the maintenance of nitrogen balance at various levels of caloric intake. Within the range of 3.0 to 4.2 milligrams of methionine, the methionine requirement seemed to vary inversely with the caloric intake.

Analyses for cystine in the foods used in the low-protein diets were most successful when a relatively high dilution was used during the hydrolysis procedure and when the salt concentration in the hydrolysates was reduced by the partial removal *in vacuo* of the hydrochloric acid prior to neutralization.

Institution Administration

Development and Use of Visual Materials for Training Food Service Employees in Work Simplification, MARJORIE M. MCKINLEY, *Iowa State College.*

An experiment in work simplification training for food service employees was conducted in a college residence unit. It was believed that such training should contribute to these objectives: (1) to provide an understanding of work simplification which will make the workers receptive to analysis of their jobs, to methods proposed by management, and to adoption and use of the methods prescribed, (2) to improve management-labor relations and increase the interest of employees in their work, (3) to stimulate employees to make suggestions for improving work methods, (4) to assist the workers to improve those methods of work which are determined by them, (5) to lower costs, and (6) to give impetus to a continuing program of work simplification.

Some visual materials were selected for use in the training classes. Others, including an illustrated booklet and color slides, were developed. During the experiment, analyses were made of various work processes, and some improved methods were developed following the classes. Tests were devised and administered to employees in individual interviews before and after the training. Certain other data were collected and used in evaluating the training program.

As an outcome of this research, generalizations were formulated relating to training and specifically to the use of visual materials for training food service employees in work simplification. Those generalizations that appeared to be generally accepted, considering the present experiment and the results and recommendations reported in the literature, were formulated as assumptions. Generalizations that need further investigation before acceptance were formulated as hypotheses. On the basis of this experiment, recommendations were made regarding research methodology for future studies.

Textiles and Clothing

Price and Performance of Representative Textile Fabrics Purchased at Retail in 1955, and Consumer Attitudes and Performance Expectations Concerning These Fabrics, NEVA ISOM HENDERSON, *Texas State College for Women.*

This study was the fifth in a series dealing with the price and quality of representative textile fabrics. Objectives were: (1) to study price and performance of cotton gingham, cotton percale, and rayon taffeta available to the consumer in the spring of 1955, (2) to compare these data with those of the same types of textiles on the market during four economic periods previously studied, (3) to compare laboratory performance of the fabrics with optimum standards, and (4) to determine the relation of performance factors and price to the Consumer Price Index.

The average 1955 price of gingham was more than twice that of the prewar period. The average price per yard of percale increased to more than four times the prewar average while the cost of rayon taffeta fluctuated least of all. The cost of living also increased during the periods considered but not in proportion to the rise in prices of gingham and percale.

The over-all picture of strength factors indicates that technical advances have tended to bring about great improvement throughout the periods studied. Dimensional stability also has improved in the case of gingham and percale.

Ginghams showed great improvement with respect to colorfastness factors during the periods studied. Percales and rayon taffetas did not show the same trend.

It was observed that price is unreliable as a sole criterion for judging the quality of textile fabrics. The performance of fabrics included in this series of studies has not corresponded to the increase in the cost of living.

Clothing Behaviorial Factors for a Specific Group of Women Related to Aesthetic Sensitivity and Certain Socio-economic and Psychological Background Factors, ADELINE M. HOFFMAN, *Pennsylvania State University.*

This is a study of the relationships between certain factors of clothing behavior for a selected group of women and certain factors of socioeconomic and psychological background, aesthetic sensitivity, and certain factors of personality. Awareness of differences in choice and use of clothing and interests and attitudes related to clothing led the writer to believe that some measurement of these differences could be made and that relationships could be established. It was recognized that in an exploratory study of this kind, the development of appropriate methodology would be a basic part of the study.

Determination had to be made as to what characteristics of clothing and what aspects of clothing behavior could be analyzed and measured objectively and which, by hypothesis, would be related to measures of personality, aesthetic sensitivity, and background factors, and then how such measurements could be made to yield scores for use in testing for statistically significant relationships.

To obtain data on choice and use of clothing, each participant in the study modeled 12 of her outer garments and 4 ensembles. Data were collected through observation of these garments and ensembles in accordance with specific detailed criteria for fit, design quality, design classification, fashion status, ensemble value, suitability to social needs, effect of clothing colors on personal coloring, and wardrobe "status" or condition. In addition, data were collected on cost level of wardrobe, size and variety of wardrobe, and level of annual purchases of selected garments.

Through the interview questionnaire method, including direct and indirect categorized and open-end questions, data on interest in clothing, knowledge of clothing, attitudes toward clothing, and aesthetic interests were collected and scored as were data on factors of cultural, economic, and social life from childhood to the present.

Problems in selection and development of instruments for measuring personality factors and aesthetic sensitivity involved the testing of available instruments and the creating of others. The sample used consisted of the wives of 80 professional men in a central Pennsylvania community. Delimitations of the sample were age, family income, residence in the community, and employment status.

In the entire study, 41 statistically significant relationships were found between various aspects of clothing behavior and aesthetic sensitivity, socioeconomic and psychological background factors, and personality factors.

Some Factors Effecting the Satisfactions and Dissatisfactions with Clothing of Women Students in the College of Education and the College of the Liberal Arts, JESSIE A. WARDEN, *Pennsylvania State University.*

This was an exploratory study of clothing for a limited college population to show the relation of clothing to certain socioeconomic factors. Data were collected on a verbal, subjective basis. The questionnaire consisted of 144 objective and open-end questions which approached the socioeconomic areas directly and areas dealing with interest, knowledge, goals, and satisfactions by a series of questions for each.

The socioeconomic factors on which data were collected and which could be broken into effective statistical classification for this study included students' choice of college, sorority versus non-sorority membership, and level of fathers' education.

Those girls who expressed greater interest in clothes by reading about and discussing clothes also expressed high knowledge of fashion trends. The Liberal Arts non-sorority girls expressed the most interest, while the

Education non-sorority girls expressed the least interest of this type.

Education girls had somewhat higher knowledge of fit, fiber, and quality-price relationships than had Liberal Arts girls, but the level of difference was not significant.

The clothing goals studied were important to all girls. The study revealed high uniformity of opinion for some goals and great diversity of opinion for others. These differences were found to be related only in part to socioeconomic classifications used. The reasons for these differences were neither hypothesized nor found.

Eighty per cent of the girls reported figure problems which caused difficulty in selecting clothes. Few girls found these figure problems of sufficient difficulty to prevent their getting the kinds of clothes they felt they wanted.

Although sewing was done for, or by, these girls in 50 per cent of the homes, the proportion of garments made was too small to have a major effect upon the wardrobe.

Favorable judgment of clothing from boys was of first importance; favorable judgment of clothing by family was second; while the opinions of other girls was of least importance.

Answers revealed a basic satisfaction of both Education and Liberal Arts girls with their wardrobes, with a major emphasis on change of quantity, with some emphasis on an increase in quality, and only minor indications of a desire to change the kinds of clothing in the wardrobes.

Communication Workshops Announced

Something new in workshops for home economists is coming up this summer and early fall. These workshops, all on communication, are scheduled for the University of Illinois, Oregon State College, University of Tennessee, and New York University.

How well home economists meet the challenges of today and tomorrow will depend to a great extent upon the ability of each home economist to communicate. All home economics jobs involve communication—whether it be in extension, dietetics, education, research, or business. Communication, developed in a home economics frame of reference, is the element that will make these workshops unique.

The workshops are designed to help you understand what communication is; to help you appreciate the role communication plays in helping you to reach people; and to help you solve *your* communication problem.

The workshops will vary from one to three weeks in length. Participants in all but the one-week program will receive university credit. Each workshop will be limited to 30 or 40 participants. Descriptive brochures are or soon will be available from: Miriam Scholl, dean, School of Home Economics, Oregon State College, Corvallis; Henrietta Fleck, chairman, Home Economics Department, New York University, Washington Square, New York; Janice Smith, head, Department of Home Economics, University of Illinois, Urbana; and Jessie W. Harris, vice-dean, College of Home Economics, University of Tennessee, Knoxville.

These workshops are a part of a larger program in home economics communication being planned and co-ordinated by the national steering committee with the National Project in Agricultural Communications. Members of the committee are: Lelia Massey, chairman, Department of Home Economics, Ohio Wesleyan University, Delaware, Ohio; Mrs. Rosa Loving, state supervisor of home economics education, Richmond, Virginia; Helen LeBaron, dean, Home Economics Division, Iowa State College, Ames; E. Neige Todhunter, dean, School of Home Economics, University of Alabama; and Mrs. Emilie Hall, home economics editor, Cornell University.

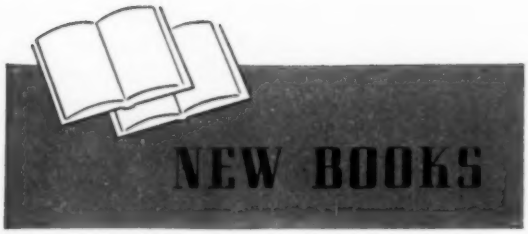
The communication workshops already scheduled are:

University of Illinois—Sept. 23 to 27. No credit. Registration fee $15.

New York University—July 22 to Aug. 9. Three hours credit. Registration fee $100.

Oregon State College—June 17 to 28. Three hours credit. Fee $24.

University of Tennessee—July 1 to 13. Three hours credit. Fee $24.



Discussion. By WILLIAM S. HOWELL AND DONALD K. SMITH. New York: The Macmillan Company, 1956, 292 pp., $4.

Home economists who want to teach and learn more about discussion than the casual lists of "leadership qualities" will feel that *Discussion* is a real find. Howell and Smith have prepared a textbook for a college course in the systematic teaching of discussion. It seeks to answer two questions: (1) What should be the theoretical content of a discussion course? and (2) What learning experiences are most effective in developing the abilities to apply the relevant theory?

The theoretical content of a discussion course, according to the authors, examines the skills and procedures of critical thinking or problem solving or the combined investigative and dialectical skills of group members. Part two of the book examines a system of problem solving.

Active participation in discussion groups is advocated throughout the text. Parts three, four, and five explain, examine, and analyze procedures, practices, and criteria of discussions. The very organization and content of the book provides exhaustive material for discussion in the discussion course; however, ample issues of current social, economic, and political life are also raised. The Appendix suggests activities for 30 periods of a beginning college course.

This is a book in which one can identify his own experiences and the ideas gathered through former study of discussion techniques and processes within an entirely new, searching, and scientific approach to discussion theory and skills. *Discussion* is not bedtime reading; it deserves and demands critical study and discussion, which it ably and exhaustively examines—FLORIDE MOORE, *University of Georgia.*

Child Development. By ELIZABETH B. HURLOCK. Third edition. New York: McGraw-Hill Book Company, Inc., 1956, 703 pp., $6.

This book is another fine contribution to the field of child development, by a well-known psychologist from the University of Pennsylvania. It is the third edition of an old title, but it is a complete rewriting of the original text. Every chapter contains some new material combined with the important older studies. The author has changed her presentation from one of reporting on studies of children to statements of accepted principles based on the best of current studies. Interspersed in the text is a listing of research, pertinent to the principles. The text is generously illustrated with diagrams, graphs, and pictures from the McGraw-Hill correlated text-films, which add to readability and clarification of the material.

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Comprehensive bibliographies, including one of films and filmstrips, classified to coincide with chapter headings, add to the usefulness of this material as a teacher reference. The book is intended as a college text and is organized on a basis of development. Dr. Hurlock is aware of the time element in teaching such a vast subject and has chosen her material with that in mind. Home economics teachers and others who work with young children will find that the book provides a convenient, authoritative means of reviewing recent research and basic principles of child development.—UNA DOWDS FOWLER, *Milford (Connecticut) Public Schools.*

The Dutton Series on Sex Education: Sex Facts and Attitudes, 88 pp., $2.50. ***Parents' Privilege,*** 64 pp., $2. ***A Story About You,*** 63 pp., $2. ***What's Happening to Me?,*** 64 pp., $2. ***Learning About Love,*** 64 pp., $2. By MARION O. LERRIGO and HELEN SOUTHARD. In consultation with Milton J. E. Senn, MD. New York: E. P. Dutton & Co., Inc., 1956.

This series of five small volumes is another contribution to the rapidly growing shelf for parents and teachers who would guide children and youth into a wholesome attitude regarding sex. The two volumes—*Sex Facts and Attitudes* and *Parents' Privilege*—are intended for the adult. The first gives a brief review of the reproductive system and its functioning. The second volume is a guide for those dealing with children three to eight years old.

A Story About You gives the preadolescent simple facts about conception, birth, and growth. For the junior high school age, there is *What's Happening to Me?* which discusses the physical, mental, and emotional changes of the early adolescent years. For the older adolescent, *Learning About Love* gives sound facts and healthy attitudes toward sex, dating, courtship, and marriage.

The Dutton Series has been approved by the joint committee on health problems in education of the National Education Association and the American Medical Association. In each volume there are explanatory diagrams and pictures and a short bibliography. The language is simple and easy to understand.—LYDIA ANN LYNDE, *Family Life Education Consultant, Alexandria, Virginia.*

The Young Child in School. By CLARK E. MOUSTAKAS and MINNIE PERRIN BERSON. New York: Whiteside, Inc. and William Morrow & Company, 1956, 256 pp., $4.

This book is a sequel to the authors' earlier publication, *The Nursery School and Child Care Center,* which was a report of data gathered from a questionnaire survey of 315 nursery schools and child care centers in the United States. The authors felt that presentation of statistical informa-

The right start...

The young man getting a start in business or industry needs the help of management, doctor, and homemaker... for maintenance of efficient good health.

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tion was not enough but should include their "thinking, feeling, perception, conviction and values" of theory and practice in early education as researchers, teachers, and parents of nursery school children.

Four theories of education (laissez-faire, authoritarian, democratic, and child-centered) and their related practices in nursery centers are discussed in terms of pertinent research, the reports of teachers who participated in the survey, and the opinions of the authors. The effects of these different theories on the nursery center program are covered under five topic headings: Physical Health and Well-Being, Emotional Climate of the Nursery School, Social Values and Social Growth, Intellectual and Artistic Experiences, and Parent-Teacher Interaction.

The last chapter, Personal Reflection and Exploration, includes Flo Gould's challenging and refreshing account of what it means to be a teacher of young children. The reader is encouraged not to discard her theories and practices in education just to take on those of another but rather to re-examine them in terms of her own experiences and relationships with children.

Every teacher of young children should benefit by a thorough and thoughtful study of the book.—FRANCES JORDAN, *University of Delaware.*

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FROM THE Editor's Mail

Adventuring in Research to Improve School Practices in Homemaking Programs is the over-all title of a new series of publications prepared by Selma Lippeatt of the Home Economics Education Branch of the U. S. Office of Education. The four leaflets in the series are designed to assist teachers, teacher-educators, and supervisors to utilize the research approach to the improvement of school practices in homemaking programs. The first leaflet is subtitled "An Individual Approach" and the second, "A Group Approach." Each is available from the Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C. Single copies 5 cents each; 100 copies, $3.75.

Textiles for Teens by Marcella Howard Ellett covers fibers, fabrics, colors, finishes, shopping "know how," and care of clothes in terms chosen to be appealing and understandable to teen-agers. The 53-page, spiral-bound booklet is published by Burgess Publishing Company, 426 S. Sixth Street, Minneapolis 15, Minnesota, and costs $1.25.

Two recent Leadership Library volumes are *How to Use Audio-Visual Materials* by John W. Bachman and *How to Plan and Conduct Workshops and Conferences* by Richard Beckhard. Both are concise how-to manuals for the inexperienced and experienced person alike. They may be ordered from Association Press, 291 Broadway, New York 7, New York. Each is hard-cover bound and costs $1.

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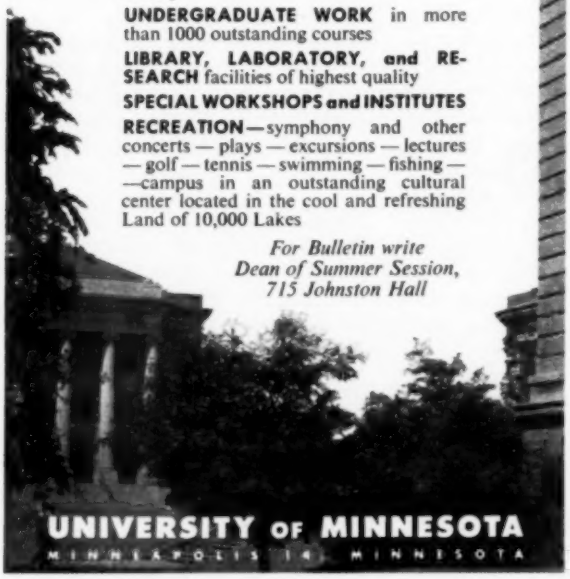

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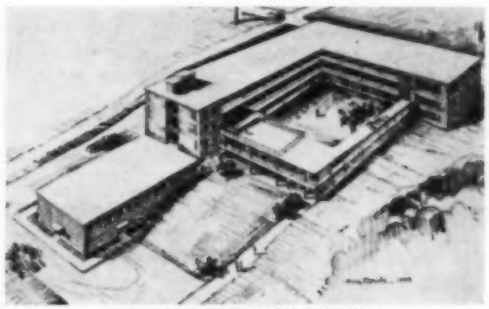
Announcement

FLORIDA STATE UNIVERSITY

School of Home Economics



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For further information write to:

Dr. Margaret R. Sandels, Dean
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NEWS NOTES

GENERAL

Marie Dye, 1948-50 president of the AHEA, who retired as dean of home economics at Michigan State University in 1956 after 34 years on the staff, accompanied by **Mrs. Merle Byers,** sailed on January 23 to begin in Naples a tour of Italy, France, Spain, Portugal, Switzerland, Germany, The Netherlands, and England. Dr. Dye and Mrs. Byers hope to visit graduates of Michigan State University in these countries.

A Recognition Fund has been established at the Merrill-Palmer School as a living memorial to the School's first director (1920 to 1947), **Edna Noble White,** who died on May 4, 1954 in Detroit, and to **Winifred Rand,** a staff member from 1924 to 1942, who died on November 17, 1955 in Francestown, New Hampshire. Contributions to the Fund will be devoted to (1) an Edna Noble White lectureship in family life, (2) a Winifred Rand graduate fellowship, and (3) other purposes to be determined by the Recognition Fund Committee. Miss White was president of AHEA from 1918 to 1920. Contributions may be sent to the Recognition Fund Committee, The Merrill-Palmer School, 71 East Ferry Avenue, Detroit 2, Michigan.

Mrs. Bessie Brooks West on January 7 joined the staff of the American Dietetic Association in Chicago, Illinois, in the new position of continuing education services director. She will broaden services to members of the Association by holding workshops and group conferences and will guide the development of talents and resources of members through helping them to expand educational skills.

From 1928 until June 1957, Mrs. West was head of the department of institutional management of Kansas State College. She is co-author of *Food Service in Institutions* and *Food for Fifty.*

Helen R. LeBaron, dean of the division of home economics at Iowa State College, has been appointed advisory editor of a new series of home economics texts which Harper & Brothers will publish. Lousene Rousseau is editor of home economics books at Harper's.

Gladys M. Wyckoff of Appleton City, Missouri, AHEA's field secretary from 1940 to 1947, received a county achievement award on January 11 from the Missouri Bankers Association and the Extension Service of the University of Missouri for "worthy progress in Balanced Farming" with emphasis this year on water management by terracing and labor-saving arrangements in beef production.

C.-E. A. Winslow, internationally known health authority who founded the department of public health at Yale University, died in New Haven, Connecticut, on January 8. Dr. Winslow retired from the Yale faculty in 1945 after 30 years of service. In 1952, in recognition of his work for 50 years in the field of public health, he received the Leon Bernard Foundation Prize at a conference of representatives from 70 nations in the World Health Organization.

INTERNATIONAL

Jessie W. Harris, vice-dean of the College of Home Economics at the University of Tennessee, left for India by air on January 12 to become better acquainted during January, February, and March with the progress made by the University of Tennessee–India staff. She expected to visit the UT–India staff members in their respective colleges and to attend conferences in New Delhi. She planned to visit former graduates of the University of Tennessee in Hawaii and the Philippines en route to India and to return by way of Japan, where she will also see former University of Tennessee home economics students. **Frances Zuill,** dean of the School of Home Economics at the University of Wisconsin, who is accompanying Miss Harris on her trip to India, will serve as a consultant to the UT–India home economics program.

Anatolia College in Thessaloniki, Greece, is seeking an experienced home economics teacher to teach at the high school level, preferably one who holds a master of arts degree. Applications should be sent to the Near East College Association, 40 Worth Street, New York 31, N. Y.

STATE ACTIVITIES

CALIFORNIA. "Recruitment and Public Relations" is the 1956-57 theme of the **California Home Economics Association.** By 1960, California, it is estimated, will need about 4,000 home economics teachers. Association members working on the recruitment and public relations committee are: Marguerite Fenner, San Francisco; Mary O. Fleming, Pasadena; Grace Diem, San Bruno; Edith Harwood, San Diego; Claribel Nye and Margaret Pritchard, Berkeley; Katherine Rathbone, Los Angeles; Dorothy Schnell, Sacramento; and Mrs. Gladys Branegan Chalkley, Riverside.

The home economists in homemaking, under the leadership of their state chairman, Mrs. Virginia Deaton of Castro Valley, also are making plans for a program on recruitment.

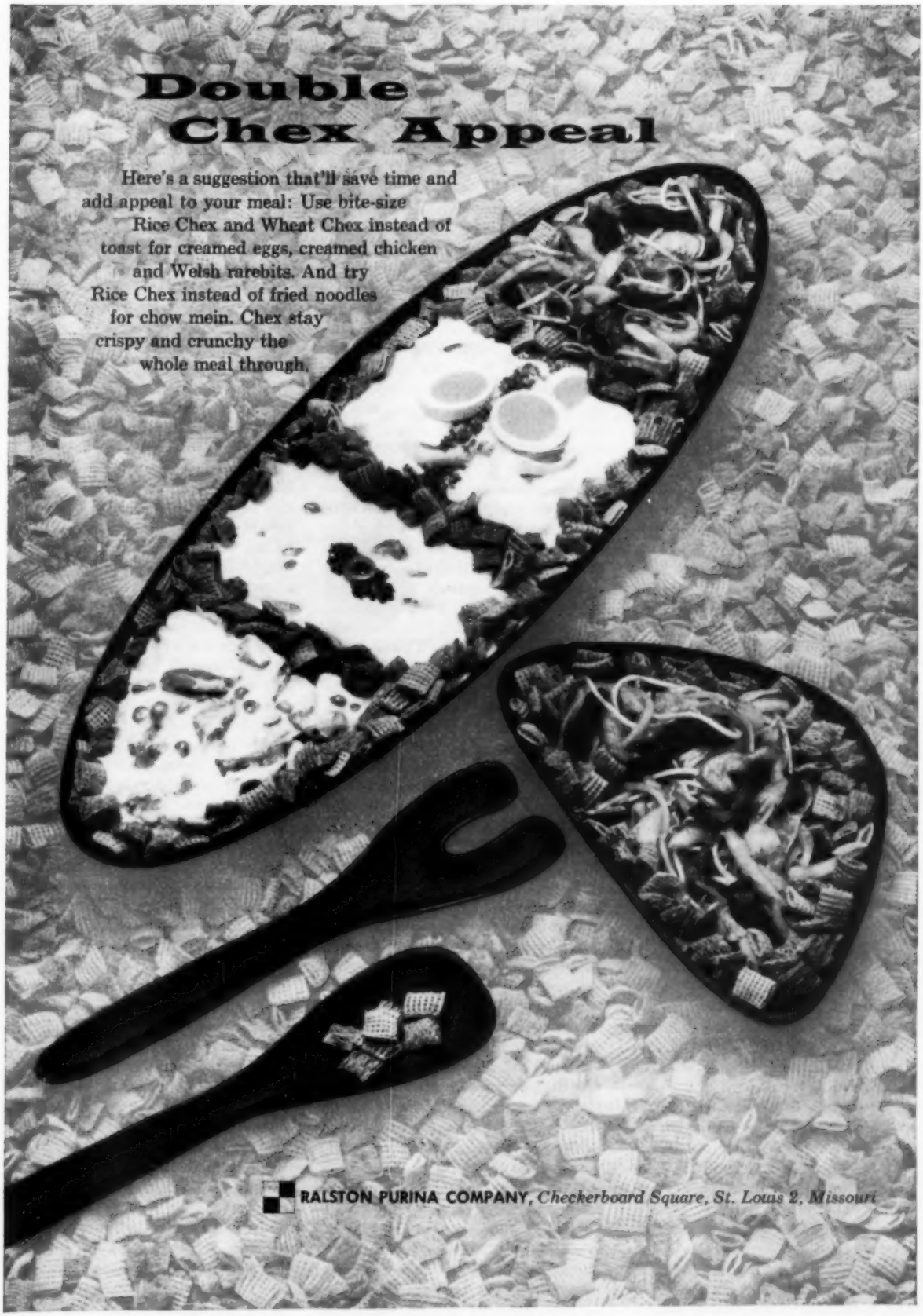
Mary Jane Isenburg, chairman of the Los Angeles HEIB's, has been appointed home service director of the retail sales division of the General Electric Appliances Company, Los Angeles.

At the University of California, Berkeley, **Dr. Ruth Okey** has been appointed acting head of home economics; **Mrs. Willa Havely Schmidt** is the new associate in home management; and **Dr. Mary Ann Morris,** assistant professor in textiles, is a new staff member in charge of the dry cleaning research project supported by funds made available by the State Board of Dry Cleaners. Dr. Morris held AHEA's 1952-53 Omicron Nu Fellowship at the University of Minnesota.

DELAWARE. A project in public relations and recruitment is part of the 1956-57 program of work of the Delaware Home Economics Association. A committee representing the areas of education, extension, homemaking, and business has recently issued a fact sheet of information regarding employment opportunities, scholarships, and available speakers.

To bolster the Association's struggling financial situation until the increase in dues can go into effect this year, Association members are selling informal note paper containing a pictorial map of the state.

DISTRICT OF COLUMBIA. AHEA President **Beulah V. Gillaspie** was the speaker at the January 23 din-


Double
Chex Appeal
Here's a suggestion that'll save time and add appeal to your meal: Use bite-size Rice Chex and Wheat Chex instead of toast for creamed eggs, creamed chicken and Welsh rarebits. And try Rice Chex instead of fried noodles for chow mein. Chex stay crispy and crunchy the whole meal through.
RALSTON PURINA COMPANY, Checkerboard Square, St. Louis 2, Missouri

ner meeting of the D. C. Home Economics Association at the Broadmoor. "What's Going on in Home Economics" was the program theme.

ILLINOIS. A progress report from Illinois, dealing with part of the **study on the nutrition status and dietary habits** of population groups of the North Central Region and made by Lillian C. Butler, Marian Tolbert Childs, and Alice J. Forsythe, shows significant correlations for age and relative body weight but a negligible correlation for the diastolic blood pressure with the total serum cholesterol of older women. These workers found that the percentage of dietary fat and protein calories as well as the total energy intake did not show a significant relationship with the variation in total blood cholesterol.

Work in Illinois concerns the amino acid and energy needs of older women and also compares their diet habits and physical condition over different periods. Other states are studying the nutritional needs and status of grade school children as a second part of the regional project.

Dedication of Bevier Hall—the new University of Illinois home economics building—and the Child Development Laboratory, is scheduled for April 4, 5, and 6. Outstanding home economists, educators, and leaders from all over the nation have been invited to attend the ceremonies, which will focus on the theme "The Challenge for Home Economics." Students, alumnae, delegates, and women of the state will be honored for their accomplishments and contributions to the field of home economics.

Saturday's program will be centered around the annual Hospitality Day for high school students. Facilities of the building and programs in home economics will be shown and explained at that time. Tours through Bevier Hall and the new Child Development Laboratory will be conducted during the three-day dedication.

With the expanded home economics program being planned at the University of Illinois, **new assistantships and fellowships** are also being added.

Two appointments have been added to the family life and child development area—one for assistant and one for dietitian in the Nursery School. Two appointments for starch research have been added to the foods and nutrition area, and others are available in home economics education, housing and household management, institutional administration, and textiles and clothing.

For further information write to Dr. Janice M. Smith, Head, Department of Home Economics, University of Illinois, Urbana.

The 1957 summer school program for the University of Illinois department of home economics will include two programs designed for graduate home economists—one for full-time study for eight weeks to complete requirements for a master's degree and the other for four weeks' study of a similar type—and noncredit skill courses for five days each and one nutrition course for undergraduates. All home economics courses will be taught in the new home economics buildings. Details can be obtained by writing Dr. Janice M. Smith, Head, Department of Home Economics, University of Illinois, Urbana.

Letitia Walsh, professor of home economics education at the University of Illinois, was presented with a life membership in the American Vocational Association in St. Louis on December 6 by a group of advanced graduate students in home economics education. Included in the presentation were a gold pin as a professional gift and a serving tray, coffee pot, cream pitcher, and sugar bowl as a personal gift. Mary Lee Hurt of Michigan State University made the presentation.

Helen McCullough of the University of Illinois home economics department was a member of the farmhouse design counseling committee for graduate students in architecture at the University who took part in a competition to design a farm home for modern living. This was the first in a series of design competitions being sponsored by the Home Research Foundation, Inc., with headquarters at Grand Rapids, Michigan. The winning design will be considered for construction next year at the new Homestyle Center, Grand Rapids.

Mrs. Paul Hendren of Carthage was chosen at the National 4-H Club Congress in Chicago as one of six former 4-H members in the United States who had made an outstanding contribution to her community. She is a University of Illinois home economics graduate.

IOWA. "The Family Looks Ahead" will be the theme of the annual Family Life Conference scheduled for April 2 and 3 at Iowa State College. Speakers will include: Clark Tibbitts, chairman of the committee on aging, U. S. Department of Health, Education, and Welfare; Wilma Donahue, chairman of the Institute of Human Adjustment, division of gerontology, University of Michigan; Sister M. Thomasita, head of the department of art at Cardinal Stritch College, Milwaukee, Wisconsin; and Mrs. Buena Mockmore, family life specialist at Iowa State College. Scheduled also are films, panel discussions, and various subject-matter programs.

LOUISIANA. For the past four years the human nutrition research in home economics at Louisiana State University has centered around **"Metabolic Studies with Preadolescent Girls."** For the past three years the University has participated with co-operating agricultural experiment stations of the Southern Region in ascertaining metabolic patterns of preadolescent children on controlled dietary regimes. In the 1956 study, 12 subjects were housed at Virginia Polytechnic Institute in Blacksburg. Members of the University staff served as chairman of the dietary committee, on the steering committee, and as laboratory analyst and house staff from June 7 to August 14.

In addition to participation in setting up and conducting the experiment so that metabolic balances for 21 nutrients may be made, the University laboratory has the specific responsibility for the determination of: (1) total energy exchange of the subjects, (2) the serum vitamin A and carotene concentrations, and (3) the serum vitamin A and carotene intake and output for each subject for the 14 consecutive 4-day balance periods.

MISSISSIPPI. Mrs. Fern Hesson, director of the school lunch program at Mississippi Southern College, was elected secretary-elect of the college and university section of the American School Food Service Association during its meeting in Chicago from October 21 to 25. Mrs. Hesson gave a report of this meeting at the November 17 meeting of the Mississippi School Food Service Association in the George Hurst School Cafeteria at Mississippi Southern College.

Mary Wilson of Mississippi State College for Women will serve as president of the National Association of Teacher Educators in Home Economics for 1956-57. This organization meets each year in connection with the meeting of the American Vocational Association. Others from Missis-

sippi who attended this meeting and participated on the program included Bertha Fritzsche of Mississippi Southern College and Rachel Maxey of Petal.

Earle Gaddis, state home demonstration agent in Mississippi, has been asked to serve on the Home Economics Research Advisory Committee of the U. S. Department of Agriculture for 1957-58. Her appointment fills the vacancy made on the retirement of Mrs. Kathryn Van Aken Burns as state leader of home economics extension in Illinois.

NEVADA. Ground has been broken in Reno for the **new building for the School of Home Economics** at the University of Nevada. The building is being made possible by a grant from the Fleischmann Foundation.

Some fifteen Nevada home economists will work with Dr. Patricia Tripple at the University of Nevada to develop a **clothing and textile curriculum guide.** Because of distances involved and families to be cared for, much of the work will be carried on by correspondence.

During the week preceding Christmas many freshman home economics students, along with other University of Nevada students, returned to their former high school to talk informally with high school students about "university life."

NEW HAMPSHIRE. At the University of New Hampshire **research** goes on constantly that involves both faculty and students. The students act as experimental subjects; data are gathered by the home economics faculty; chemical analysis is made by the chemistry faculty; and findings are compiled by the home economics department.

Major areas now being investigated are: (1) human nutrition and (2) clothing and textiles.

Anna Light Smith, chairman of the department of home economics, working with the technical committee of the Northeast Region, has been conducting a project which furnishes significant data for the recent investigational work on **decrease in the phospholipids** when a person consumes a diet relatively high in vegetable fat.

Associate Professor June Ericson has been actively engaged in the cooperative Northeast Region clothing and textiles research program on the **whiteness retention of white Dacron blouses.** Laboratory work is being completed in the analyses of the effectiveness of laundry methods; possible relationship of color maintenance to fiber, yarn, and fabric and fabric properties; and degradation of fabric.

Two practical texts stressing the problems of the individual

Marriage Adjustment

Jacob L. Hirning, Roosevelt University
Alma L. Hirning, Kendall College

The sociological and psychological approaches are carefully integrated in this text, but major emphasis is on the psychological adjustment of individuals. The authors' twofold purpose is to give the student insight into the meaning of marriage and to acquaint him with *guiding principles* that will help him prevent or solve marital problems of his own at some future date.

Psychology of Personal and Social Adjustment

Henry Clay Lindgren, San Francisco State College

This text is written for the normal student—the individual who has made a reasonably successful adjustment to life and its problems, but who would like to be even more successful. It is designed to help such a student in two ways: (1) in developing a better understanding of himself and of others, and (2) in working out problems involved in attaining success in college, in choosing and adjusting to an occupation, and in courtship and marriage.

College Division, 55 Fifth Avenue, New York 3, N. Y.
American Book Company

NEW JERSEY. Mrs. Barbara Albert Russell, recently home demonstration agent in Orange County, New York, has joined the psychometrics department of the United States Testing Company, Inc., at its main laboratories in Hoboken.

NEW YORK. The Southeastern District Home Economics Association in conjunction with the New York City Personnel Department has brought about the installation of a **new career and salary plan.** Mandatory annual wage increments are now provided where formerly increments had been given at the discretion of department heads. Fifteen million city jobs were evaluated in the study.

The 27th annual meeting of the **New York State Dietetic Association** will be held May 2 and 3 at the Hotel Utica, Utica.

Pauline Girard, former home service director in New York State and Connecticut, northeastern representative of the Wheat Flour Institute, and urban home demonstration agent in the State Extension Service, Rochester, is now assistant professor of foods and nutrition at the State University Teachers College in Oneonta.

Marjorie Burns, former regional home service director for Avco Manufacturing Company, is assistant professor of foods and nutrition in extension at Cornell University.

Mary Keeting Wilson of Teachers College, Columbia University, is giving two courses in foods primarily related to family-centered teaching.

Faith Fenton, professor of foods and nutrition in the New York State College of Home Economics, Cornell University, has returned from a four-month Food and Agriculture Organization assignment in Egypt. Dr. Fenton assisted in the establishment of a home economics program at the University of Cairo.

Mrs. Betty Starr, former homemaking teacher at North Syracuse Central School and at present coordinator of district leaders for the New York State Association of Future Homemakers of America, served as consultant from the North Atlantic Region at an FHA workshop at Colorado A and M College in July.

OHIO. Twenty-five sets of the home economics career slides of the

Ohio Home Economics Association, "This is my job . . . and I like it," were sold in December. The University of Alaska was one of the purchasers. Each set of 25 slides costs $7.50 and is available from Dorothy E. Jones, Board of Education, 1380 East Sixth Street, Cleveland, Ohio.

Speakers announced for the Association's meeting to be held in Akron on April 12 and 13 at the Mayflower Hotel include: Capt. John A. Ey, Jr., of the Office of the Surgeon General of the Army, Washington, D. C., who is scheduled to speak on "A Bit of Zest . . . A Dash of Zinc . . . A Twist of Mystery" to show Ohio home economists how they can do a more effective job of teaching; Adelia M. Beeuwkes, associate professor of public health nutrition at the University of Michigan, who will speak on "Nutrition . . . Health . . . in the Age of Automation"; and Charles Truxall of the Ohio Dry Cleaners Association, who will tell the group about the problems of dry cleaners.

Mrs. Kathryn Gorrell Ashcraft, home service department training field supervisor for the Ohio Fuel Gas Company, Columbus, on October 16 received the American Gas Association Home Service Achievement Award, sponsored by *McCall's* magazine. The award, $200 and a bronze plaque, was given in recognition of outstanding service to Ohio homemakers. It is the seventh time the home service department of the Ohio Fuel Gas Company has been named for this national award.

Mrs. Ashcraft was cited for her detailed description of the 12-week training course given to home economics graduates who will serve as a local "Betty Newton"—the professional name used by Ohio Fuel Gas Company's home service representatives throughout the state. The course, based in part on a new training manual written by Mrs. Ashcraft, provides the home economists with latest information on appliance features and up-to-the-minute cooking and laundering techniques and orients the budding "Betty Newton" on the Company she represents and the community where she will work.

PENNSYLVANIA. Graduate assistantships for 1957-58 in home economics teaching and research are described in a leaflet recently issued by the College of Home Economics at the Pennsylvania State University. Appointments will be made on May 1. Further information and application forms may be obtained from the Office of the Dean, College of Home Economics, The Pennsylvania State University, University Park, Pennsylvania.

Rose Mary Guerra, recently director of home economics for the Easy Washing Machine division of the Murray Corporation of America, has accepted the position of home equipment editor on the food and equipment staff of the *Farm Journal.*

SOUTH DAKOTA. Marie Curry, president of the **South Dakota Home Economics Association** and a member of the South Dakota 4-H Club staff since 1948, was married to Robert L. Beck, principal of the Elk Point High School, on December 27, 1956.

The South Dakota home economics council met in December to make plans for the state meeting in Pierre on April 26 and 27.

Mildred Reel, assistant national adviser for the Future Homemakers of America, worked with South Dakota chapters from November 12 to 16. She participated in an area workshop for surrounding chapters held at the Brookings High School the evening of November 13 and also took part in a Region IV meeting held November 14 at Irene.

Rena Wills, former state extension nutritionist, resigned to accept a position on the resident staff of the foods department of the South Dakota State College on December 1.

TENNESSEE. "Your Federal Meat Inspection Service" was the theme of a program held in Memphis, Tennessee, on November 30, 1956, for persons in the field of home economics and communications. About 65 persons attended the meeting, sponsored by the U. S. Department of Agriculture and the Consumer Food Marketing Program of the Agricultural Extension Service and presided over by Mrs. Viola McCain, consumer food marketing specialist.

Following the opening luncheon, served in the Round-Up Room at the South Memphis Stock Yards by courtesy of the Memphis Packing Company, Samuel Kelsall, III, of the local Federal Meat Inspection Service showed a new colored film on "Your Meat Inspection Service." Afterwards the group toured the Memphis Packing Plant and saw the local inspectors inspecting the live animals, examining the carcasses and parts, and supervising the curing, canning, sausage-making, and other processing.

After touring the plant, the group re-assembled in the Round-Up Room for a panel discussion, led by Dr. Kelsall, and participated in by F. M. Strauss, general manager of the Memphis Packing Company, and C. D. Strauss, president of the South Memphis Stock Yards. This discussion gave the group a better understanding of the value of the symbol of this service—the small round, purple stamp that means U. S. Inspected and Passed—and a better understanding of the many people working behind the scenes to assure consumers' eating with confidence.

ON THE JOB

WHEN IT COUNTS

1957 RED CROSS CAMPAIGN

UTAH. Norma Burnham is the new director of extension service for the state. New staff members at the University of Utah include **Gladys E. Jordan** and **Dr. L. A. Pettit.**

Mrs. Virginia Harder has joined the staff at Utah State Agricultural College to teach home economics education.

Brigham Young University has the following new staff members: **Dr. Kenneth L. Cannon, Dr. Floyd Anderson, Lucille N. Jensen, Lucille L. Trost, Lorraine Storey,** and **Evelyn Applonie.**

VERMONT. Mrs. Ruby C. Thornely has succeeded Helen Finnegan as state supervisor of homemaking education. Mrs. Thornely attended Colorado A & M College and came to Vermont following a teaching career in Illinois, where she became assistant state supervisor. Recently she has been working toward her doctor's degree at Michigan State University.

Elizabeth Snell has been appointed assistant state supervisor of homemaking education. A graduate of the University of Vermont, she has had several years' teaching experience in Vermont and abroad.

Now, for the 10th year

Toni helps you teach your girls good grooming!

Finest material of its kind available!

Send for Toni's complete good grooming educational unit today. Film, Booklets, Wall Charts, Teaching Guide . . . ALL FREE!

Nearly fifty thousand teachers, Girl Scout leaders and other good grooming instructors are using Toni's Educational units. They find this complete educational unit essential in covering all phases of good grooming. When you are leading a good grooming class the unit means less homework for you and more fun for your students. The kit helps you create and hold your students' interest much more than lectures alone. Use the coupon to get all of these materials now—they're FREE.

Contents of FREE kit:

- **4 WALL CHARTS IN COLOR**... Dramatic wall charts show how to (1) have a cleaner, clearer skin (2) make pincurls and use curlers (3) choose and apply lipstick (4) give home permanents.
- **ILLUSTRATED BOOKLET**... Written especially for your students "Beauty on a Budget" gives complete information on hairstyling, use of make-up, skin care and other techniques of good grooming.
- **TEACHING GUIDE**... has a ready-to-use lesson plan which will conserve your planning and teaching time, make your classes easier to teach.
- **ALSO AVAILABLE... HOLLYWOOD MOVIE IN COLOR AND SOUND**... "Heads Up For Beauty" is an exciting 25-minute film (16mm) which tells an appealing story while it points out the "whys" and "hows" of good grooming.

Use this coupon today!

The Toni Company, Educational Dept. JHE 357
Merchandise Mart, Chicago 54, Illinois

☐ Please send booklets for _____ (number) students

☐ I would like to show the film on

_____ (date) or _____ (second choice)

_____
Name

_____
School

_____
Address

_____
City State

FLASHES FROM OUR ADVERTISERS AND EXHIBITORS

The General Foods Fund, Inc. has made grants totaling $288,250 in educational and scientific fields for 1956. The Fund, an independent foundation sponsored by General Foods Corporation, has also authorized the establishment in 1957 of 24 home economics fellowships for graduate study in nine universities and three colleges, to be supported by grants totaling $84,000. Educational institutions which will benefit by the home economics fellowships are Cornell University, Pennsylvania State University, Ohio State University, Michigan State University, Purdue University, Iowa State College, Oklahoma A & M College, Kansas State College, and the Universities of Illinois, Minnesota, Tennessee, and Wisconsin.

Fund trustees explain that: "The plan is to make grants of $7,000 to each of the institutions, $1,000 as a cost of education supplement and $6,000 to establish two $3,000 fellowships. That will give the institutions the opportunity to grant either one-year fellowships to two candidates for master's degrees or a two-year fellowship to one candidate for a doctor's degree."

Watch for Dream Whip—General Foods new dessert topping mix. Good news for many of us—it's low in calories, only 15 per tablespoon.

New plastic "yardsticks" for measuring the quality of fresh fruits and vegetables are rapidly gaining favor among food processors, according to the **Monsanto Chemical Company.** These yardsticks are color standards made from styrene plastic, used to grade produce by color prior to processing. Among standard colors already matched in styrene are tomato red, peach yellow, and Lima bean green.

An Introduction to Rubber, a new filmstrip for grades 5 to 9, can be obtained without charge from Teachers Library, Inc., 1790 Broadway, New York 19, N. Y. It is hoped that this 53-frame filmstrip, sponsored by the United States Rubber Company, will aid teachers in their presentation of the problems of production and use of rubber from trees as well as rubber made from chemicals and in their presentation of the place of the rubber industry in our economy. The filmstrip is enlivened by drawings and sketches and is accompanied by a teachers' guide to stimulate discussion and classroom experiments.

The Wisconsin Department of Agriculture has announced the appointment of Mrs. Helen Strickland as a nutritionist to work with Mrs. Joan Hood in the home economics section of the Department. The section helps in publicity and recipe development on state products. Two of the recent new products are a cranberry put through the same process as a maraschino cherry and called Cransweet and a new cheese candy which has 40 per cent processed cheese taking the place of some of the carbohydrate.

A new electric **juicer-slicer-shredder** unit has been introduced by the John Oster Manufacturing Co. of Milwaukee. This unit, available in two models to fit either the single-speed or two-speed Osterizer, comes with three separate discs—one for juicing, one for slicing, and one for shredding. It is operated by the motor base of the Osterizer liquefier-blender and fits on the base in place of the regular glass container.

Philco Corporation has purchased the Bendix home laundry equipment business of AVCO Manufacturing Corporation in the United States and the world except in Canada. Bendix washers and dryers will be marketed through Philco distributors and dealers, and Philco will service existing Bendix home appliances.

Sales of home laundry washers topped all other major white goods appliances in unit sales during 1956, according to the American Home Laundry Manufacturers' Association. In fact, they tell us, sales of washers surpassed the nearest competitor, refrigerators, by approximately 20 per cent or 750,000 units.

Hoover's new **Constellation** for 1957, manufactured by The Hoover Company, North Canton, Ohio, has a three-wheel nozzle which can be used to clean either bare floors or rugs without changing tools or "flopping" the nozzle. The wheeled carriage glides over the carpeting and will not bury itself in the pile. A flexible connection keeps the nozzle flat on the floor for greater suction and cleaning efficiency.

American Cyanamid Company has announced that Acronize, its food freshness process, will be marketed through its new Farm and Home Division, which went into operation at the beginning of 1957. The new division plans construction of an Agricultural Center near Princeton, New Jersey.

The Vacuum Cleaner Manufacturers' Association cites a survey by Daniel Starch & Staff of more than 4,000 representative rural households which showed that 39 per cent of the existing wall-to-wall carpet in rural home living rooms was installed within the past two years. This survey also notes that the farmer today shows more interest in his home and its furnishings than ever before. During 1955, 12 per cent of the country's farm families remodeled their homes as against the national average of 9.2 per cent, and 33 per cent redecorated their homes as against 30.6 per cent for the nation.

Have you seen the **Abbott Laboratories' ad** showing cups of coffee appearing to extend into infinity? Ten men, 220 China cups and saucers, seven pints of pink lacquer, 35 hours, and 13 gallons of coffee went into the preparation of that photo. Locating 220 distinctive white cups and saucers presented the first problem. Then the cups had to be washed, dried, and the outsides sprayed with pink lacquer. Transformed from white to pink, the cups were arranged in eight rows on white sheets of paper and filled with coffee. To spread light evenly over the cups and saucers, a white paper tent was erected around the display. The two ad men who checked out the final setup said they felt as if they were getting ready for the granddaddy of all coffee breaks.

APPLICATION FOR HOTEL ACCOMMODATIONS

48th ANNUAL MEETING

AMERICAN HOME ECONOMICS ASSOCIATION

ST. LOUIS, MISSOURI

June 25–28, 1957

MAIL EARLY ***MAIL EARLY***

All reservations must be received by June 8.
(List of Available Hotels on Back of this Page)

1. Reservation requests must be sent to the Hotels Convention Reservation Bureau—AHEA, 911 Locust Street, Room 406, St. Louis 1, Missouri
2. Please make all changes and cancellations through Hotels Convention Reservation Bureau—AHEA.
3. Single rooms are very limited. Your chances of securing accommodations at the hotel of your choice will be much better if your request calls for rooms to be occupied by two or more persons.
4. Room assignments will be made in order received.
5. Be sure to list definite arrival and departure date and time.
6. Be sure to list all names of occupants of rooms.

HOTELS CONVENTION RESERVATION BUREAU —AHEA
911 Locust Street, Room 406
St. Louis 1, Missouri

Please check if you are attending a pre-convention session ☐
Specify name of group (HEIB or EXTENSION) .....

Please reserve hotel accommodations as follows:

1. **Preferred Hotels:**

First Choice ..... Fourth Choice .....
Second Choice ..... Fifth Choice .....
Third Choice ..... Sixth Choice .....

2. **Please specify the number and types of rooms desired:**

..... Single room(s) with bath for ..... person(s). Rate $ ..... to $ ..... per room.
..... Twin bedroom(s) with bath for ..... person(s). Rate $ ..... to $ ..... per room.
..... Double bedroom(s) ..... persons. Rate $ ..... to $ ..... per room.
..... Parlor bedroom suite ..... person(s). Rate $ .....

3. **Date of Arrival** ..... Hour ..... A.M. or ..... P.M.
(Reservations will be held **only** until 6:00 p. m. unless the hotel is notified otherwise.) (If, after making reservations, you find it impossible to attend please notify the Hotels Convention Reservation Bureau—AHEA promptly.)

4. **Date of Departure** ..... Hour ..... A.M. or ..... P.M.

5. **The Name of Each Hotel Guest Must Be Listed.** Reservations cannot be made in any hotel unless two names are given for each double-bedded room or twin-bedded room. If this information is not given on your original application, the Hotels Convention Reservation Bureau must send you a card asking that you submit two names per room. This means unnecessary delay and lessens the possibility of assignment to the hotel of your choice.

NAME	STREET ADDRESS	CITY	STATE

6. **BE SURE TO SIGN YOUR NAME** ➡ **Signed:** .....

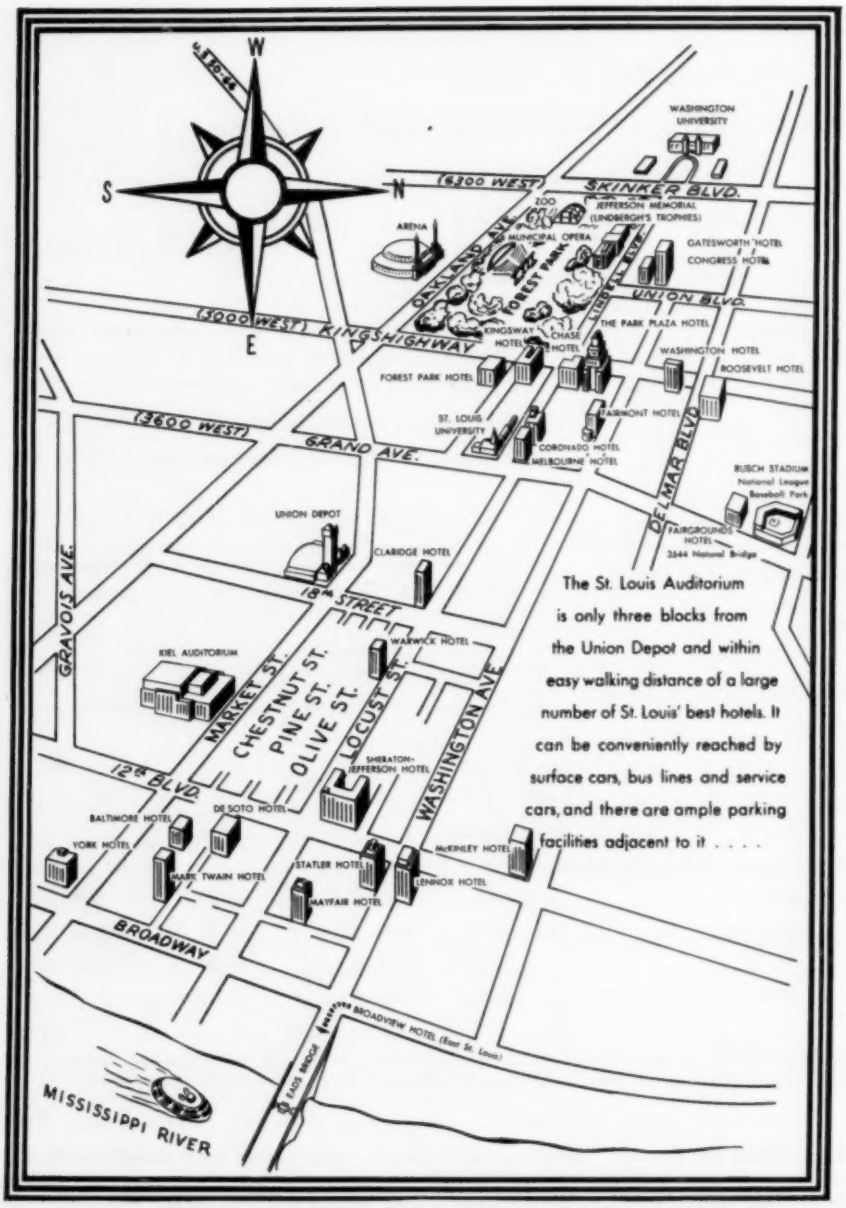
(Company) .....

(Street Address) .....

(City and State) .....

I am (please check) AHEA ..... EXHIBITOR .....

(OVER)



Distance—Hotels to Auditorium

	Miles (*Approx.*)
Chase	3¾
Claridge	¾
Coronado	1¾
DeSoto	¾
Kingsway	3¾
Lennox	¾
Mark Twain	½
Mayfair	¾
Melbourne	1¾
Park Plaza	3¾
Sheraton-Jefferson	½
Statler	¾

MAP OF ST. LOUIS SHOWING LOCATION OF THE COOPERATING HOTELS LISTED BELOW

HOTEL	FOR ONE PERSON	FOR TWO PERSONS— DOUBLE BED	FOR TWO PERSONS— TWIN BEDS	2-ROOM SUITES PARLOR & 1 BEDROOM
Chase	$ 8.50-$13.00	$12.00-$15.00	$13.00-$16.00	$23.00-$55.00
*Claridge	4.50- 8.00	6.50- 10.00	7.50- 12.00	16.00- 18.00
Coronado	7.50- 12.00	9.50- 16.00	9.50- 16.00	17.00- 40.00
*DeSoto	4.00- 6.50	6.00- 7.50	8.00- 10.00	12.50- 15.00
Kingsway	6.50- 9.00	8.50- 11.00	9.50- 12.00	12.50- 22.50
Lennox	6.50- 11.00	7.50- 11.00	11.50- 13.00	20.00- 35.00
*Mark Twain	5.50- 8.50	7.50- 10.00	9.00- 11.00	15.50- 24.00
Mayfair	6.50- 11.00	7.50- 13.00	11.00- 12.00	17.50- 25.00
*Melbourne	5.75- 7.00	7.75- 9.00	9.50- 12.00	15.00- 23.00
Park Plaza	10.00- 14.00	14.00- 16.00	14.00- 18.00	24.00- 40.00
Sheraton-Jefferson	7.35- 10.85	10.35- 13.85	12.35- 16.85	25.00- 42.85
Statler	6.50- 12.00	10.00- 14.00	11.50- 15.00	28.00- 35.00

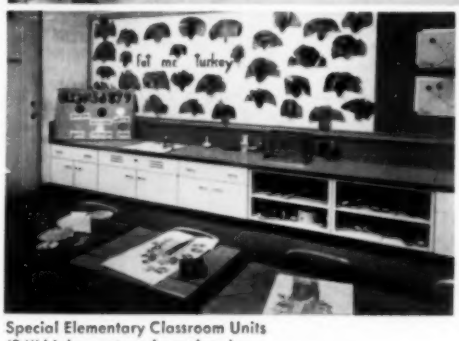
Sales tax 2% additional.

* Hotels are fully air-conditioned except those marked with asterisk which are partially air-conditioned; rooms at or near minimum rate in these four hotels are not likely to have air conditioning.

St. Charles...

Now in 126 Detroit area schools

Storage and Instruction Units — custom-built to special classroom needs



Special Elementary Classroom Units
(24" high counters shown here)

Custom-Built Clothing Classrooms

Custom-Built Steel Kitchens • All photos are of classrooms planned and installed by St. Charles School Specialist, C. B. Wright, following close consultation with Detroit area architects, school administrators and home economists.

Steel Kitchens and Casework... custom-built for all levels of teaching!

In the last seven years . . . in the Detroit area alone . . . 126 schools have ordered new homemaking classrooms designed, planned and built with St. Charles *custom steel units!* The reason is simple: only St. Charles *custom* construction offers such flexibility to meet individual classroom needs—*at all levels of teaching.*

When you specify St. Charles, you can depend on careful individual planning by a skilled St. Charles specialist—and quality construction throughout! Quality—and custom construction . . . two reasons St. Charles was selected for 126 Detroit area schools, and for hundreds of other schools throughout the country.

For your free copy *of PLANNING HOMEMAKING CLASSROOMS, write on your letterhead to St. Charles, Dept. JHES-2*

StC

casework • sinks and counters • special purpose units

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save all sugar's calories

and you can't taste the difference!

In the Spring, a weight-watcher's fancy turns to thoughts of light-calorie meals. And what dish better expresses the freshness of the new season than a delicious, low-calorie Fruit Salad? With its flavorsome, SUCARYL-sweetened dressing*—*containing a mere 6 calories per tablespoon serving*—the Spring Fruit Salad above will delight all weight-watchers. The same dressing, incidentally, if made with sugar, would cost you a whole 54 calories! It's nice to know, too, that, with SUCARYL, you can't ever taste the difference.

* You'll find this recipe plus many, many others for calorie-saving foods and beverages in the new Sucaryl recipe booklet. Get your free copy at the neighborhood pharmacy.

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